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ADDRESSING THE LAND USE, ENVIRONMENTAL QUALITY AND TRANSPORTATION CONNECTION IN CHITTENDEN COUNTY, VERMONT

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ADDRESSING THE LAND USE, ENVIRONMENTAL QUALITY AND TRANSPORTATION CONNECTION IN CHITTENDEN COUNTY, VERMONT:

Using NEPA to Arrive at an Affordable, Effective and Environmentally Responsible Solution for Vermont’s Transportation Future

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Vermont Law School
LL.M. Thesis
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INTRODUCTION

In my current work as water resources attorney for a non-profit conservation organization, I focus intensely on the question of wetland and water resources protection under the federal Clean Water Act. Environmental attorneys, like most people, have a tendency to create compartmentalized worlds for themselves. In my compartmentalized world, I am daily aware of the roads, big-box stores, subdivisions, and other developments that are paving over aquatic habitat, disrupting important natural cycles, and causing a host of pollutants to wash into and foul many of the waters people and wildlife depend on. When I have occasion to visit the issues of other advocates whose work is focused on, for instance, air quality, protection of endangered species habitat, environmental justice or climate change, I find that this same “sprawling” growth is a root cause of many of these problems as well.

It has become apparent that for many of the environmental and quality of life challenges facing us today, few may have effects as broad and fundamental to our overall environmental quality and daily quality of life as that of sprawl. Sprawl is no accident. It is largely the result of policy and investment choices our society has made over the last fifty to one hundred years. One of the most fundamental of these choices is the heavy investment we have made in highway infrastructure to accommodate the automobile. If we intend to address the environmental and other problems created by sprawl, it is essential to recognize how major transportation infrastructure investments affect growth patterns.

This thesis concerns a major proposed belt highway project in the Burlington, Vermont region. The highway’s projected cost is currently $223 Million, a once in a
generation transportation investment for Vermont that can be otherwise spent. The Burlington region is increasingly experiencing sprawl and congestion. Proponents of the highway feel it is necessary to relieve congestion and foster economic growth. Opponents of the highway contend that it will do little more than open up undeveloped land to further sprawl with few benefits and tremendous expense.

This thesis will examine whether the National Environmental Policy Act of 1969 (NEPA)\(^1\) – which requires that environmental impacts from major federal actions, like highway projects, be examined and that alternatives be considered\(^2\) – has proved a useful tool for ensuring Vermont thoughtfully considers the most affordable, effective and environmentally responsible solutions for its traffic problems prior to making its planned investment. Part one of the thesis looks generally at highways and the problem of sprawl. Part two looks at sprawl in the Burlington area and explores the region’s land use and transportation policies. Part three examines the political and historical context of the proposed highway, including the context in which the NEPA review of the highway has occurred. Part four explores the NEPA review of the highway from a legal and policy perspective. Finally, part five looks forward to the next phase of the NEPA process and possible alternatives that should be explored to arrive at a sensible and affordable transportation solution that will promote the area’s long-term environmental well-being.

\(^1\)See 42 U.S.C.A. § 4321 \textit{et seq.}

\(^2\)\textit{Id.}
PART I:  THE TRANSPORTATION AND LAND USE CONNECTION: A HALF
CENTURY OF HIGHWAY INVESTMENT AND A CHANGED AMERICA

If Americans were asked to name the most important events of the last half
century that have shaped their daily lives, it is likely that few would name highway
construction and transportation investment. Yet, over the last half century, highways
have served as a major catalyst to transform the way we live and the quality of our
environment.\(^3\) By providing unprecedented access to previously remote land, highways
have played a defining role in shaping where we live, how we live, where we shop, eat,
work and the structure of our communities.\(^4\)

Over the last fifty years, America’s land use patterns have changed dramatically.
America has gone from an urban and rural nation to a suburban and exurban nation.\(^5\)
While no phenomenon as complex as suburbanization can be attributed solely to one
factor, highway construction has been key in enabling suburbanization to occur.\(^6\) As a
recent survey of leading experts declared, “More than any other single measure, the
[Federal-Aid Highway Act of 1956] created the decentralized, automobile-dependent
metropolis we know today.”\(^7\)


5 See GUTFREUND at 1-2.

6 See BOARNET AND HAUGHWOUK, supra, at 1.

7 U. S. ENVIRONMENTAL PROTECTION AGENCY, Our Built and Natural Environments: A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality 10 (January 2001) [hereinafter EPA, OBNE], citing, ROBERT FISHMAN, The American Metropolis at Century’s End: Past and Future Influences (Washington, D.C. Fannie Mae Foundation, Winter, 1999). Other policy choices have also played a role in the trend towards suburban growth. These include policies to encourage home ownership such as the income tax deduction for interest on mortgage payments and government subsidies
History shows the strong connection between transportation investments and land use patterns. In 1960, shortly after the passage of the Federal-Aid Highway Act of 1956, then Professor Daniel Patrick Moynihan recognized this connection, declaring that, “Highways determine land use, which is another way of saying that they settle the future of the areas in which they are built. … For good or for ill, the location of interstate arterials would, more than any other factor, determine how this growth would take place.”

Fifty years of highway investment have borne out the late Senator Moynihan’s prediction. In 1950, America was a largely urban and rural nation, with about 70% of Americans living in cities. Prior to 1950, cities tended to be compact. Most families owned at most one car, and, tending to live close to their work location, many people were able to walk to work or take public transit such as subways or buses.

In contrast, today about 60% of Americans live in suburban areas where the automobile is the principle form of transportation and land use patterns are often “sprawling” or disperse. Of course, defining both suburbs and sprawl can be difficult for infrastructure such as sewer and water. Also, a post-war boom and unprecedented American affluence spurred America’s move to the suburbs. See EPA, OBNE at 11.

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9 1000 FRIENDS OF OREGON, Making the Connections: A Summary of the LUTRAQ Project 3 (February 1997), citing DAVID RUSK, CITIES WITHOUT SUBURBS (The Woodrow Wilson Press, 1993) [hereinafter 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project].

10 See e.g. GUTFREUND, supra, at 1-2 (discussing how twentieth century transportation policy has caused urban areas to trend from centralized growth to deconcentration).

11 See id. at 54-55 (stating the in the early 1950s, over a quarter of American families did not own a car and 60% of women did not even have a driver’s license).

12 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 3.
and there is no universally agreed upon definition for sprawl. However, many consider sprawl to be growth that is characterized by low-density development, geographic separation of essential places such as work, homes, shopping and schools, and almost complete dependence on automobiles for travel. Given this definition’s focus on the automobile’s impact on growth and its relatively wide acceptance, particularly by smart growth groups, this thesis will use this definition of sprawl. Much suburban growth arguably fits this definition of sprawl.

A. A Sprawling Half Century

In 1956, Dwight Eisenhower pushed through a bold plan to build a major nationwide interstate highway system that would connect small and large urban areas with massive, federally funded highways. The passage of the 1956 Federal-Aid Highway Act was the culmination of a decades long shift in transportation investments to automobile infrastructure.

Once built, interstate highways opened up remote areas outside cities to development and development came. While building roads to move growth away from

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13 See e.g. RALPH HEIMLICH AND WILLIAM ANDERSON, ECONOMIC RESEARCH SERVICE, U.S. DEPARTMENT OF AGRICULTURE, Development on the Urban Fringe and Beyond: Impacts on Agriculture and Rural Land (June 2001).

14 See id.

15 GUTFREUND, supra, at 55-58 (detailing the passage of the 1956 Federal-Aid Highway Act).

16 Id.

17 EPA, OBNE, at 10; see BOARNET AND HAUGHWOUK, supra, at 4 (describing the model of growth that predicts suburbanization as a result of highway construction); see also, GUTFREUND, supra, at 87-127 (detailing the decentralization of growth in the Denver area as a result of highway focused infrastructure investment).
cities was not necessarily unintended and many urban planners initially believed that cars and highways would liberate people from the confines of city life, the resulting sprawl and congestion has been a largely unforeseen consequence of highway construction.

For instance, between 1954 and 1997, metropolitan land area has almost quadrupled. In the past 30 years alone, many metropolitan land areas have increased in size by 50% and growth in metropolitan areas has exceeded population growth by an average of 2.65 times. Growth has also become less dense. According to a study

It is worth noting in detail how highways moved growth from cities to suburbs. Historically, cities have tended to develop along centers of trade where goods can easily be received and distributed. See ALEX MARSHALL, HOW CITIES WORK: SUBURBS, SPRAWL, AND THE ROADS NOT TAKEN xiii - xiv (University of Texas Press, 2000) [hereinafter MARSHALL]; GUTFREUND, supra, at 74-75; BOARNET AND HAUGHWOUK, supra, at 4 (describing the need of cities to be near water or rail before highways); EDWARD L. GLASSER, MATTHEW KAHN, AND CHENGHUA CHU, Job Sprawl: Employment Location in U.S. Metropolitan Areas 1 (The Brookings Institution, Center on Urban & Metropolitan Policy, May 2001) [hereinafter GLASSER, KAHN AND CHU]. Because cities existed as centers of wealth, they were also where most of the jobs and commerce were found. See BOARNET AND HAUGHWOUK, supra, at 4. Prior to suburbanization, people generally either had to be in a city to find a job or to find a market for their goods or services, unless they farmed the surrounding land. See GLASSER, KAHN AND CHU, supra, at 1. For the first half of the twentieth century, people lived close to work because it was the only practical options. Highways changed that.

First, highways made it easier for people to live in locations distant from their place of employment. EPA, OBNE, at 9; BOARNET AND HAUGHWOUK, supra, at 5. Second, highways themselves changed the nature of where economic activity can take place by allowing goods and services to be moved about without the need for the centralized ports and rail yards that cities provide. Id. Highways made it possible for employers to locate outside of the cities along highways and interchanges. Id. Naturally, as residential and commercial development moved outside the cities, retailers providing goods and services soon followed. EPA, OBNE, at 10.

See e.g. GUTFREUND, supra, at 93 (detailing how Denver planners in the 1950s and 1960s sought to avoid downtown congestion by inhibiting downtown growth and encouraging growth on the periphery); David Owen, “Green Manhattan,” THE NEW YORKER (October 18, 2004) (quoting prominent urban planner John Nolen who, in 1932, stated, “The future city will spread out, it will be regional, it will be the natural product of the automobile, the good road, electricity, the telephone, and the radio, combined with the growing desire to live a more natural, biological life under pleasanter and more natural conditions.”).

See GLASSER, KAHN AND CHU, supra, at 1; see e.g. GUTFREUND, supra, at 70-74 and 87-127 (detailing how in the early part of the 19th Century walking and a successful transit system were the primary means of transport in Denver, CO until the transit system collapsed due largely to poor management, lack of funding, and policies that favored roads and automobiles and how these policies have led to the dispersed suburban growth Denver has recently experienced).

EPA, OBNE, at 4. During this time, metropolitan land area went from 18.6 million acres to 74.0 million acres in the lower forty-eight states. Id.

Id. at 5.
performed in the late 1980s, commercial and residential development used .65 acre of land per person in 1988 compared to about .18 acre of land per person in the 1950s.\(^{22}\) This trend of rapid land consumption is showing no signs of slowing. From 1992 to 1997, more land was developed than during the previous ten year period.\(^{23}\)

Moreover, despite increasing overall roadway capacity and the intuitive notion that more roads will lessen traffic and make travel easier, highway driven growth has actually had the effect of causing Vehicle Miles Traveled (VMT) and congestion to grow at a steep rate.\(^{24}\) Like land use consumption, VMT growth is outpacing population growth and, even with more highway lanes and miles being built, our current ability to accommodate traffic is dwindling.\(^{25}\) For example, VMT have more than doubled since 1970 and total VMT in the United States increased 63% between 1980 and 1997.\(^{26}\)

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\(^{22}\) WILLIAM FULTON, ROLF PENDALL, MAI NGUYEN, AND ALICIA HARRISON, Who Sprawls Most? How Growth Patterns Differ Across the U.S. 6 (The Brookings Institution, Center on Urban & Metropolitan Policy, July 2001), citing 2020 PANEL, Population Growth and Development in the Chesapeake Bay Watershed to the Year 2020, Annapolis, MD (1988). The dramatic trends of development can be seen quite clearly in the Washington, D.C. and Baltimore areas. The two cities are approximately 50 miles apart. In the 1950s, Washington and Baltimore were two very distinct cities. While growth had expanded slightly outside of the city limits, growth was largely contained near the urban centers and substantial agricultural and undeveloped lands separated the two cities. EPA, OBNE, at 7-8. The years from 1950 to 1990 saw the construction of a major highway connecting the two cities and massive beltways around both cities. These highways have essentially acted like wheel spokes where extensive development has occurred. As a result, Washington’s and Baltimore’s growth areas have blurred into one large suburban expanse that covers virtually the entire area between the two cities. Now, almost all the agricultural and undeveloped land between the two cities has been swallowed by suburban growth and the cities now share common suburbs. In fact, the U.S. Census now recognizes the region as one large and consolidated metropolitan area. \(\text{id.}\)


\(^{24}\) EPA, OBNE, at 21-25.

\(^{25}\) \(\text{id.}\) at 19. Since 1980, VMTs have grown at an annual rate of about 3.1% compared with a 1.0% increase in population growth. \(\text{id.}\)

\(^{26}\) \(\text{id.}\) VMT growth during the 1980s and 1990s in urban areas is particularly striking when compared to population growth. Between 1982 and 1996, the Salt Lake City metropolitan area experienced a population growth rate of 32% and a VMT growth rate of 129%; the Chicago area had a population growth of 11% and a VMT growth rate of 79%; Nashville’s metropolitan area had a population growth rate of 25% while
increased VMT, traffic has similarly soared and peaked period congestion has approximately doubled in the last twenty years. \(^{27}\)

While factors fueling this trend are certainly complex, the fact that highways are allowing for dispersed growth is a primary culprit.\(^{28}\) Sprawl is forcing more and more people to drive further and more often to get to destinations such as work, home and the places they shop, eat and recreate.\(^{29}\) Building highways is spawning more drivers at a faster rate than it can relieve traffic.

B. The Environmental Impacts of Sprawl.

Many of today’s most pressing environmental problems are a direct result of the sprawling development patterns we have seen over the last fifty years.\(^{30}\) More roads, rooftops, lawns, driveways, parking lots, stores, houses and automobile use spell trouble for our water, health, air and wildlife. The three primary (but by no means exclusive)

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\(^{27}\) See David Schrank and Tim Lomax, Texas Transportation Institute, The Texas A&M University System, The 2003 Annual Urban Mobility Report 14 (September 2003) [hereinafter Schrank and Lomax]. In a recent study, the average annual traffic delay per person in urban areas studied soared from 7 hours in 1982 to 26 hours in 2001. \(\text{Id.}\) at iii. In the twenty years from 1982 to 2001, congested peak period travel doubled from 33% in 1982 to 67% in 2001 – meaning that 2 of 3 cars experience congestion during peak travel periods each day. \(\text{Id.}\) at 14. In 1982, 32% of the major road system was congested; 59% was congested in 2001. \(\text{Id.}\) The number of hours of the day when congestion might be encountered grew from approximately 4.5 hours in 1982 to about 7 hours in 2001. \(\text{Id.}\)

\(^{28}\) These factors mainly involve demographic changes, such as the number of two income families where more than one person is commuting to and from work on a regular basis. For instance, men used to drive significantly more miles on average than women. By 1995, women were driving 60-70% as much as men and continuing to close the gap. Also, comparatively falling fuel costs and increased affordability of cars has likely led to an increase in driving. EPA, \(\text{OBNE}\) , at 21.

\(^{29}\) See EPA, \(\text{OBNE}\) , at 21. For instance, from 1983 to 1995, the average length of a commute to work increased by 36%. \(\text{Id.}\)

\(^{30}\) See EPA, \(\text{OBNE}\), at 12-19 and 25-34 (describing the environmental impacts of sprawl and increased automobile use).
environmental problems where sprawl is a major culprit are: (1) habitat loss and fragmentation; (2) degradation of water quality and water resources; and (3) air pollution, including emissions of gases that contribute to global warming.\footnote{See id.}

1. Habitat Loss.

Currently, habitat destruction is the main factor threatening 80\% or more of the species listed under the federal Endangered Species Act.\footnote{Id. at 12-13, citing FLATHER, C.H., L.A. JOYCE AND C.A. BLOOMGARDEN (1994), as cited in, NOSS, REED AND FOBERT PETERS Endangered Ecosystems: A Status Report on America’s Vanishing Habitat and Wildlife 46 (December, 1995).} More than 95\% of listed species are endangered or threatened to some extent because of habitat loss or destruction.\footnote{Id. at 13. In the 1980s alone, the Washington, DC area lost 211,062 acres of farmland, forest, wetlands and other open space. Id.} Dispersed, sprawling development in metropolitan areas has consumed immense quantities of critical habitat such as woodlands and wetlands.\footnote{Id. at 13.}

Even if habitat is not directly lost, development activities disturbing habitat areas can have devastating consequences. For instance, rather than returning to its natural state, disturbed habitat is often invaded by exotic plants.\footnote{Id. at 13 -14. Examples of exotic species invading disturbed habitat include the fragile Florida Everglades where, for instance, the Australian melaleuca tree invades after water diversions. Also, introduced European grasses have altered the structure of fragile California coastal communities. Id.} More than fifty percent of federally listed species are affected by interactions with non-native species.\footnote{Id. at 13-14. Id.} Also,
fragmentation of habitat can be as damaging as destruction of habitat. Among other factors increasing the risk of extinction, fragmentation interferes with wildlife travel, decreases habitat size (which has extreme impacts on large predator species), isolates populations and reduces interaction with other wildlife communities, and increases interaction between humans and wildlife, all of which result in declines in species diversity and populations.

2. Water Quality.

Sprawl negatively affects water quality. This is primarily because of the deleterious effects that impervious cover, such as roads and rooftops, and other imprints of development on the landscape has on watersheds, the land areas that drain into water bodies. Development produces a cascade of negative effects. As more land is developed, more impervious cover is introduced into watersheds. Rain and snowmelt runoff from impervious cover washes nutrients, chemicals, trash, heat, acidity and other pollutants into nearby waterways. Impervious cover also decreases groundwater recharge since water is unable to percolate into aquifers. This decreases streamflow and can impact municipal water supplies.

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37 *Id.* at 14.

38 *Id.* Also, studies that have shown that even seemingly minor impacts from development can have rather significant impacts on species. For instance, a New Jersey study found that small roads and power-lines that slice relatively narrow corridors through habitat areas had similar negative impacts on forest-nesting birds as did larger development activity. *Id.*

39 *Id.* at 16-17.

40 See *id.*

41 See *id.*

42 See *id.*
Depending on a watershed’s size, most water bodies start to show signs of impairment when about 10% of the water body’s watershed is impervious cover. Many developed areas now far exceed this threshold and others will if development keeps up at its current pace. As of 1996, 38% of assessed estuary miles were impaired for basic uses like fishing and swimming, with approximately 46% of that impairment attributable to urban and suburban runoff; 36% of total rivers miles were impaired, with urban and suburban runoff responsible for 12% of the problem; 39% of assessed lake acres were impaired, with urban and suburban runoff causing 21% of the impairment; and 13% of ocean shorelines were impaired, with approximately 55% due to urban runoff. Sprawl is undoubtedly one of the largest current threats to water quality.

3. Air Quality and Atmospheric Pollution.

43 See id.

44 See id. at 17.

45 See id. at 19.

46 Id., at 16, citing, U.S. ENVIRONMENTAL PROTECTION AGENCY, OFFICE OF WATER, National Water Quality Inventory: 1996 Report to Congress (1998). At the crosshairs of both habitat loss and water quality impacts are wetlands. Wetlands are valuable ecosystems that not only provide irreplaceable habitat to a variety of species, but that also serve important water quality functions. Wetlands act as buffers, filtering and cleaning runoff before it enters other waters such as lakes and rivers. Wetlands also help water quantity by regulating flow. Acting as sponges, wetlands retain water during wet periods, controlling flooding. Wetlands act to recharge groundwater aquifers and allow for the slow release of water during dry periods. This has the effect of allowing for more constant flow in rivers and streams during both wet and dry periods. This reduces flooding which scours out streams, eroding banks and washing out habitat, and also reduces low flow periods when habitat and water quality suffer due to lack of water, oxygen and increased water temperature with lower, more stagnant flows. Id. at 14-15. Highway construction and sprawl present some of the most current pressing threats to wetlands. See id. at 15 (detailing studies showing that wetland loss is caused by highway construction and resulting sprawl). As of a 2000 EPA report, loss of wetlands on nonfederal lands is averaging about 70,000 to 90,000 acres per year. Id. at 19.
By inducing vehicle travel, highway construction and resulting sprawl have serious impacts on air quality.\textsuperscript{47} Vehicles emit several pollutants regulated under the federal Clean Air Act. These pollutants include carbon monoxide (CO), nitrogen dioxide (NO\textsubscript{2}), ozone (O\textsubscript{3}), sulfur dioxide (SO\textsubscript{2}), certain particulate matter (PM) and lead (Pb).\textsuperscript{48} Vehicles also emit volatile organic compounds (VOC) and oxides of nitrogen (NO\textsubscript{x}),\textsuperscript{49} as well as hazardous air pollutants (HAPs).\textsuperscript{50} Vehicles account for about 21\% of the 8.1 million tons of HAPs emitted worldwide.\textsuperscript{51}

These pollutants present a variety of significant health and environmental concerns. A 1995 study, looking at the year 1991, estimated that air pollutants from motor vehicles were responsible for 50-70 million respiratory-related restricted activity days, about 852 million headaches, approximately 20,000-46,000 cases of chronic respiratory illness, an estimated 530 cases of cancers and 40,000 premature deaths.\textsuperscript{52}

When it rains or snows, motor vehicle emissions are also responsible for significant atmospheric nitrogen input into water bodies,\textsuperscript{53} atmospheric loading of metals into water bodies,\textsuperscript{54} and wet depositions of polycyclic aromatic hydrocarbons (which can

\textsuperscript{47} See id. at 25-29 (describing the air quality impacts of increased vehicle travel).

\textsuperscript{48} Id. at 25-26.

\textsuperscript{49} Id. at 25. Highway related emissions account for 57\% of CO emissions, 30\% of NO\textsubscript{x} emissions, 27\% of VOC emissions, 2\% of SO\textsubscript{2} emissions, 45\% of PM-10 emissions (mostly road dust), and .5\% of lead emissions. Id. at 26.

\textsuperscript{50} Id. at 26-27.

\textsuperscript{51} Id.

\textsuperscript{52} Id. at 28, citing, McCUBBIN D. AND M. DELUCCHI, \textit{Health Effects of Motor Vehicle Air Pollution} (1995).

\textsuperscript{53} Id. at 29. Motor vehicles account for about 30\% of such input, but this number fluctuates greatly. Id.

\textsuperscript{54} Id. Depending on the metal, vehicles are responsible for such loadings into water bodies in the range of 10\% (cadmium) to 95\% (lead) of the total. Id.
be carcinogens). Moreover, vehicle emissions are a primary source of greenhouse gas (GHG) emissions, which most scientists believe are contributing to global warming. In 1997, the transportation sector was responsible for 32% of carbon dioxide emissions, the primary GHG. This number represents a sharp upward trend. As the sprawl proliferated by highways lead to increased automobile use, our air quality suffers.

C. The Economic Impacts of Sprawl

Sprawl has enormous economic impacts on both individuals and communities. Sprawl tends to redistribute jobs and economic activity from a centralized urban core to outlying areas. While developers often claim that growth labeled as sprawl creates jobs and economic growth beneficial to areas, there is ample evidence that “sprawl” negatively affects urban centers, which lose in overall share of tax revenue and jobs; individuals, who are forced to spend more time, effort and money commuting; employers

55 Id. Emissions from vehicles result in depositions in the range of 1-10 micrograms per square meter annually. Id.

56 Id. at 30. Global warming is anticipated to create a host of problems. Global warming could lead to climatic changes such as increased droughts, changes in vegetation, and more frequent and intense storm events. Global warming is also expected to increase sea levels, which could flood coastal areas and wetlands, as well as push salt water further upstream into important rivers and water tables, many of which are used to supply drinking water. Id. at 29-31. All of these changes could have potentially devastating economic and environmental consequences. For instance, in Vermont, global warming poses an enormous threat to two of Vermont’s best known industries – leaf peeping (watching fall foliage) and skiing. See U.S. ENVIRONMENTAL PROTECTION AGENCY, Climate Change and Vermont (September 1998). If current projections prove correct, over the next several decades sugar maple forests (which provide the brilliant reds and oranges of Vermont’s fall, as well as maple syrup) will eventually be replaced by oak and conifer forests more tolerant of higher temperatures. See id.

57 EPA, OBNE, at 30.

58 Id. at 30-31. In 1984, the transportation sector emitted 379 million metric tons of carbon. Id. By 1997, that number had grown to 473.1 million metric tons, and is projected to be 697.3 million metric tons by 2020 – 47.5% of all carbon dioxide emissions. Id.

59 See JOHN BRENNAN AND EDWARD HILL, Where Are The Jobs?: Cities, Suburbs, and the Competition for Employment (The Brookings Institution, Center on Urban and Metropolitan Policy, November 1999) (detailing the loss of job growth in cities to suburban areas) [hereinafter BRENNAN AND HILL].
who lose productivity from workers burnt out on long commutes; and suburbs themselves, which must provide services to disparate developments.\textsuperscript{60}

Trends illustrate how urban centers are losing job growth gains to the suburbs. A study of urban centers that focused on just three years in the 1990s – 1993 to 1996 – found that while most cities experienced job gains, these gains by and large trailed the gains of the cities’ suburbs.\textsuperscript{61} This indicates that overall job share is shifting towards suburban communities.\textsuperscript{62}

As stated above, sprawl is also forcing people to commute further and further to work, school, shopping and other locations.\textsuperscript{63} Commuting places an economic toll on individuals and families. Cars are expensive. The more individuals and families are forced to rely on cars to get around, the more of their income is forced to go towards

\textsuperscript{60} See id.; SURFACE TRANSPORTATION POLICY PROJECT, Transportation and Economic Prosperity available at (http://www.transact.org/library/factsheets/prosperity.asp) site last visited Jan. 19, 2004 (detailing worker productivity lost due to stress from commuting); SCHRANK AND LOMAX, supra, at 23 (finding that congestion costs the average person $520 a year); CONSERVATION LAW FOUNDATION AND VERMONT FORUM ON SPRAWL, Community Rules: A New England Guide to Smart Growth Strategies 4, 5, and 51 (2002) [hereinafter CLF AND VFOS, Community Rules] (detailing the infrastructure costs to communities resulting from sprawl).

\textsuperscript{61} BRENNAN AND HILL, supra, at 7.

\textsuperscript{62} Id. In fact, 82% of cities studied lost their overall percentage of private sector employment market share to their suburbs over this three year period. Id.

This trend towards the suburbanization of the job market is also demonstrated by the trend in where office space is being located. In 1979, about three quarters of office space was located in central cities. ROBERT LANG, Office Space: The Evolving Geography of Business 1 (The Brookings Institution, Center on Urban & Metropolitan Policy, October 2000). By 1999, that number had dropped to 58%, while the suburban share grew to 42%. Id. More alarming, only 38% percent of office space in 1999 was located in traditional downtown areas. Id. Nearly the same amount of office space (37%) was located in highly dispersed “edgeless” locations which lack well-defined boundaries and can extend over tens, if not hundreds, of square miles. Id. The results of such a dispersal of jobs is that, according to a 2001 study, in the largest 100 metropolitan regions in the country, more than a third of people work at a location more than ten miles from a city center; in contrast, only 22% of people work at a location within 3 miles of a city center. GLASSER, KAHN AND CHU, supra, at 1.

\textsuperscript{63} See GLASSER, KAHN AND CHU, supra, at 2-3.
transportation.\textsuperscript{64} Compared to other expenses and debt people acquire – such as houses that allow for a tax deduction for interest and generally appreciate over time – cars are poor investments that offer little to no tax breaks and lose their value quickly.\textsuperscript{65}

Transportation is consuming more of American families’ income than any expense except for shelter.\textsuperscript{66} For most American families, this means that more of their out-of-pocket expenses go to transportation than to education, health care, or food.

Currently, the average American household devotes 18 cents of each dollar it spends on getting around.\textsuperscript{67} Ninety-eight percent of this cost is on automobiles; only two percent is on public transit.\textsuperscript{68}

Sprawl, therefore, directly impacts a household’s bottom line. In 28 metro areas studied, households in the top one-third most sprawling areas\textsuperscript{69} devoted 20% more of their spending dollar to transportation than households in the one-third of metro areas with the fewest sprawling characteristics.\textsuperscript{70} Furthermore, areas with the greatest amount of road building experience the highest transportation costs.\textsuperscript{71} But cities where spending

\textsuperscript{64} SURFACE TRANSPORTATION POLICY PROJECT AND CENTER FOR NEIGHBORHOOD TECHNOLOGY, Driven to Spend: A Transportation and Quality of Life Publication 6-7 (2000).

\textsuperscript{65} Id. at 23-27.

\textsuperscript{66} Id. at 5.

\textsuperscript{67} Id. at 5.

\textsuperscript{68} Id.

\textsuperscript{69} In this study, sprawl was measured by a formula accounting for mix of land uses, clustering and centeredness, and compactness. See id. at 32, Appendix A.

\textsuperscript{70} Id. at 6.

\textsuperscript{71} Id. at 7. Houston, Atlanta and Dallas are such areas. In Houston, transportation accounts for 22.1% of the average families’ expenditures; for Atlanta, 21.7%; for Dallas, 19.7%. In all of these cities, transportation costs for families exceed costs for shelter. Id. at 12-14.
on highways is significantly less and lane miles per capita have actually decreased since 1988, lower transportation costs are found.\textsuperscript{72}

What these numbers show is that heavy investment in road building creates a transportation infrastructure and development pattern that forces high costs onto individuals and families by limiting lower cost, non-automobile transportation choices. Measured by the amount of roadway mileage compared to transit mileage, areas like Kansas City or Dallas that offer little transportation choice have high household expenses for transportation.\textsuperscript{73} Meanwhile, areas like New York or Chicago that offer much greater choice have lower transportation expenses.\textsuperscript{74}

Also, transportation costs tend to fall more heavily on lower income families. Cars are, by and large, unavoidable, fixed costs.\textsuperscript{75} While people can choose less expensive cars, maintenance, gas and insurance costs are difficult to avoid.\textsuperscript{76} As a result, poorer families must often devote a larger share of their budget to transportation.\textsuperscript{77} Not

\textsuperscript{72} \textit{Id.} at 22. This is true for New York, Baltimore and Honolulu, which had the lowest transportation expenditures found in the study. In these three cities, between 1988 and 1997, lane miles per capita were a negative 1.6\% due largely to lack of heavy investment in road building. \textit{Id.} at 22. However, the portion of the average household budget spent on transportation declined 8.5\% over this time. \textit{Id.} This is compared to an increase of 17.7\% in Houston, Atlanta and Dallas, which increased roadway mileage per capita by 21.5\%. \textit{Id.}

\textsuperscript{73} \textit{Id.} at 19. Kansas City has a ratio of .2 miles of transit service per mile of roadway and Dallas offers about .3 miles of transit service per mile of roadway. \textit{Id.} Transportation expense per household is 18.1\% and 19.7\% respectively. \textit{Id.} at 13.

\textsuperscript{74} \textit{Id.} at 19-20. New York offers a high of 4.6 miles of transit per mile of roadway and Chicago offers about 2.2 miles of transit for each mile of roadway. \textit{Id.} Transportation expense in these cities per household is 14.5\% and 14.9\% respectively. \textit{Id.} at 13.

\textsuperscript{75} See \textit{id.} at 10.

\textsuperscript{76} See \textit{id.}

\textsuperscript{77} \textit{Id.} at 10. For the poorest households (incomes under $11,943), transportation accounts for about 36\% of total expense; for low income families making between $11,944 and $22,945, transportation accounts for about 27\% of household expense. For higher income families with incomes of $60,535 or greater, transportation only accounts for about 14\% of household expense. \textit{Id.}
only do transportation costs affect less well off families’ bottom line, they also divert their limited wealth away from other, better investments like homes.\textsuperscript{78}

\textbf{D. Short Term Benefits; Long Term Costs.}

In the short run, highways create economic benefits, but over the long term, the costs of highway expansion greatly exceed the benefits and highways become a poor investment. When an area is given access to the federal interstate system, a path of commerce to other areas is created and that area often benefits.\textsuperscript{79} While an interstate highway often initially benefits an area, as additions in capacity are added to a metropolitan region’s highway system the overall economic benefits diminish and only provide advantage to select areas and interests, such as newly created highway interchanges and developers who are able to construct office parks and shopping centers in such locations.\textsuperscript{80} Meanwhile, the costs of highways impact the entire region by degrading environmental quality, creating congestion, and causing other negative impacts.

\textsuperscript{78} See \textit{id.} at 23-27. The negative effects of transportation costs hit all income levels, and sometimes in less than obvious ways. For instance, while homes in locations closer to urban centers may be more expensive, investing money in real estate will likely appreciate over time and be a better long term investment than buying a cheaper home in a remote location that may force a family or individual to incur transportation costs, such as extra cars, that are relatively poor investments. See \textit{id.}

\textsuperscript{79} \textit{Boarnet and Haughwort}, \textit{supra}, at 5. This is true not only with highways, but generally with avenues opening intercity and inter-regional commerce. For instance, the Erie Canal, which opened trade between New York City and the newly settling Midwest and West, is generally considered to be a major factor why New York eclipsed and then far exceeded its nineteenth rival cities for commercial dominance on the East Coast. \textit{Id.} It is worth noting that Philadelphia, which in many ways was New York’s economic, cultural and population equivalent prior to the Erie Canal, made attempts in the early 19\textsuperscript{th} Century to connect itself to western trade by constructing a canal to the Ohio River. These early 19\textsuperscript{th} century efforts failed and Philadelphia watched New York surge to the undeniable prominence it has held for well over the last century. \textit{Id.}

\textsuperscript{80} See \textit{id.} at 6 and 7.
on quality of life.\textsuperscript{81} Also, rather than creating new economic growth, highways tend to merely redistribute such growth.\textsuperscript{82} For instance, job growth at a newly constructed suburban interchange often comes at the expense of job growth in the urban core.\textsuperscript{83}

However, communities may not always adequately weigh the costs and benefits of new highway construction due to the manner in which highways are funded. Historically and currently, most federal highway projects are largely supported by federal funds with comparatively minimal state or local contribution.\textsuperscript{84} While this may have made sense for major interstate highways that often connect interstate metropolitan and economic areas, continuing such a funding structure for smaller, localized highway expansions has the potential for perverse effects.\textsuperscript{85} This funding structure allows localities to experience the benefits of a project at a mere fraction of the monetary cost.\textsuperscript{86} This may cause localities to justify and promote projects with dubious benefits because they are not bearing the brunt of the financial burden.\textsuperscript{87} This becomes particularly true when many of the costs to the community of highway expansion, such as environmental degradation from sprawl, congestion, and economic harm to the urban core, are often hard to quantify.\textsuperscript{88}

\textsuperscript{81} Id. at 7, 11-13.

\textsuperscript{82} Id. at 8-9.

\textsuperscript{83} Id.

\textsuperscript{84} Id. at 14-16.

\textsuperscript{85} See id.

\textsuperscript{86} Id.

\textsuperscript{87} See id.

\textsuperscript{88} See id. at 11-13.
Fifty years of heavy investment in highways has brought us sprawling suburban growth, unprecedented traffic and a host of environmental problems. Despite this, our policies to address congestion are all too often to simply do more of the same: build more highway capacity either by expanding our current roads, or by constructing new ones. While it makes intuitive sense that bigger and more roads will decrease traffic, the approach of continuous capacity expansion instead bears semblance to an alcoholic reaching to the bottle to cure a hangover. As the cycle continues, the relief sought diminishes and the resulting hangover intensifies. More roads breed more cars, which in turn breed more roads, and so on. From both an environmental and an economic perspective, it makes sense to step back from this largely failed approach and confront the land use/transportation connection in a manner that fosters growth that will reverse this cycle.

In the face of increasing growth pressure, escalating congestion and an expensive proposed belt highway, Burlington, Vermont’s small metropolitan area is presented with an opportunity to decide how it will invest in its transportation future and address the challenges of growth and traffic.

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89 See e.g. TAXPAYERS FOR COMMON SENSE AND FRIENDS OF THE EARTH, Road to Ruin: The 50 Worst Projects in America That Would Waste Tax Dollars, Harm Our Communities and Damage the Environment 4 (April 1999) [hereinafter TAXPAYERS FOR COMMON SENSE AND FOE]; Keith Schneider, “There’s a Better Way to Get There,” GREAT LAKES BULLETIN: MAGAZINE OF THE MICHIGAN LAND USE INSTITUTE 7-10 (Summer/Fall 1999).
PART II: AN OVERVIEW OF THE BURLINGTON AREA: SPRAWLING GROWTH DESPITE SMART GROWTH POLICIES

Burlington, Vermont is in many ways an idyllic place. The “Queen City” of Lake Champlain, it sits on the shores of a bay of the Lake overlooking the high peaks of the Adirondack Mountains to the west and the Green Mountains to the east. While its population of just less than 40,000\(^{90}\) would constitute only a large town in most places, it is Vermont’s largest city and does not have a close competitor.\(^{91}\) Like larger cities, it serves as the metropolitan center of a rapidly developing and suburbanizing region, Chittenden County, where roughly 150,000 people live, about a quarter of Vermont’s population.\(^{92}\) While the Burlington metropolitan area has been defined differently over time, the entirety of Chittenden County is currently defined as a single planning region for both land use and transportation purposes by the Chittenden County Regional Planning Commission (a state created regional land use planning entity) and the Chittenden County Metropolitan Planning Organization (a federally created regional transportation entity). References to the Burlington region and Chittenden County are, unless otherwise indicated, synonymous throughout this thesis.

Despite its relatively small size, the Burlington region can be viewed as functioning like a microcosm of larger metropolitan areas. The region is centered around Burlington. Chartered in 1763, Burlington is an old port city and a traditional center of

\(^{90}\) 2000 U.S. Census.

\(^{91}\) See id.

\(^{92}\) Id.
commerce. In the nineteenth century, given its access to Lake Champlain shipping routes, which stretched from New York City to Montreal and beyond, Burlington emerged as Vermont’s preeminent city and became a hub of trade, primarily for the timber industry.

As an old city that was largely founded and established prior to the automobile, Burlington developed in a manner favorable to pedestrian use. Burlington is laid out in a more or less gridded network of streets running parallel and perpendicular to each other without any major arteries running through the downtown area of the city. Most of downtown Burlington has developed in a mixed use pattern, where residential, cultural, educational, commercial, and industrial uses are interspersed and exist side by side.

Other municipalities in Chittenden County form half rings around Burlington, Winooski, a small city adjacent to Burlington (both of which are considered traditional centers of growth), and the mostly suburban city of South Burlington, which borders Burlington to the east and south. The first “ring” of towns beyond the core consist of,
north to south, Colchester, Essex (both the town and the village of Essex Junction), and Williston.\textsuperscript{99} The outer ring of towns (which are really two rough rings) are, north to south and counterclockwise on a map, Milton, Westford, Underhill, Jericho, Bolton, Richmond, Huntington, Hinesburg, Buels Gore, St. George, Shelburne and Charlotte.\textsuperscript{100} These towns are connected to Burlington by three state arterial highways: Route 7, which runs north to south through Charlotte, Shelburne, South Burlington, Burlington, Colchester, and Milton; Route 2, which runs roughly west to east through Burlington, South Burlington, Williston, Richmond and Bolton; and Route 15, which runs north and east through Winooski, Essex, and into Underhill, Jericho and Westford.\textsuperscript{101} Two interstate highways service the region: I-89, which runs from New Hampshire diagonally Northeast through Vermont to Burlington and then heads north into Quebec; and I-189, a connector highway that runs from I-89 to Route 7 in South Burlington.\textsuperscript{102} Richmond, Williston, South Burlington, Burlington, Winooski, Colchester and Milton are serviced

\begin{footnotes}
\footnote{99 Northern Cartographic, Greater Burlington and Chittenden County Road Map (5th Edition).}
\footnote{100 Id.}
\footnote{101 Id. The elements of a highway system are generally characterized as local, connector, arterial and interstate highways. Local highways serve immediately adjacent lands and generally carry only low traffic volume. Collector highways connect local roads and carry a higher traffic volume. Arterial highways connect collector and local highways. Traffic volume on arterial roadways is generally significant. Interstates are intended to serve regional and interregional needs. See Wayne Senville; Donald Horenstein; Vermont Public Interest Research Group, Inc.; Friends of the Earth, Inc.; Sierra Club, Inc.; and Conservation Law Foundation, v. Mary E. Peters in her official capacity as Administrator of the Federal Highway Administration, and Patricia A. McDonald in her official capacity as Secretary of the Vermont Agency of Transportation, No. 2:03-cv-279, nt. 3 (D.Vt. May 10, 2004) [hereinafter Senville].}
\footnote{102 Id.}
\end{footnotes}
by interchanges off I-89. Additionally, major trans-suburban routes exist. Route 2A serves to connect Williston, Essex Junction and Colchester and interchanges with I-89. Route 117 skirts the Williston and Essex line and connects to Essex Junction at its five corners intersection.

Like many other larger metropolitan areas, the Burlington region has experienced significant suburbanization in the last half century. Despite progressive state policies favoring “smart growth,” the urban core of the Burlington area is losing job growth, housing growth and population growth at a steadily increasing rate to its suburbs. Much of this suburban development is occurring in a disperse and automobile dependent manner typical of sprawl, with growth often sprouting along interstate interchanges and state highways that have been upgraded and widened.

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103 Id.
104 Id.
105 Id.
106 See e.g. THE CHAMPLAIN INITIATIVE, The Case for a Healthy Community: The History of Sprawl in Chittenden County 16-32 (March 1999) (detailing the history of growth in Chittenden County)[hereinafter THE CHAMPLAIN INITIATIVE]; CCRPC, supra, at 2.1.
107 As outlined by the Environmental Protection Agency’s Smart Growth Network, “smart growth” is growth that seeks to mix land uses; take advantage of compact building design; create a range of housing opportunities and choices; create walkable neighborhoods; foster distinctive, attractive communities with a strong sense of place; preserve open space, farmland, natural beauty, and critical environment areas; strengthen and direct development towards existing communities; provide a variety of transportation choices; make development decisions fair, predictable and cost effective; and encourage community and stakeholder collaboration in development decisions. ENVIRONMENTAL PROTECTION AGENCY, SMART GROWTH NETWORK, What is Smart Growth? (April 2001).
108 See THE CHAMPLAIN INITIATIVE, supra.
109 A leading study of sprawling growth patterns in Chittenden County defines sprawl in a manner consistent with the definition used in this thesis:

Sprawl is a regional land use pattern of scattered, low-density, single use development. It is a cumulative phenomenon that begins at the edge of traditional centers and moves outward incrementally into previously rural areas. It is land-consuming, auto dependent, energy-
A. **Suburbanization in Chittenden County.**

The trend towards suburbanization in Chittenden County is similar to that seen throughout the country.\(^{111}\) In 1940, five traditional, compact growth centers – Burlington, Winooski, Essex Junction, Milton Village and Richmond Village – housed 71% of the County’s population and Chittenden County was generally comprised of such growth centers surrounded by extensive farmland.\(^{112}\) By 1996, about half of Chittenden County residents lived in the suburbs and the County’s farmland had substantially dwindled.\(^{113}\)

In line with trends nationally, land use in the Burlington area is outpacing population growth. Between 1982 and 1997, the Burlington metropolitan region had a change in population of 20.6%.\(^{114}\) Meanwhile, urbanized land grew by 50.4%.\(^{115}\) The region’s density (population divided by urbanized land) dropped by almost 20% – meaning that growth patterns in the Burlington region are becoming less dense and more

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\(^{110}\) See THE CHAMPLAIN INITIATIVE, supra; CCRPC, supra, at 3.2 (“[Post World War II] [n]ew residential neighborhoods, retail stores, motels, restaurants, and manufacturing facilities were built along paved highways that were once dirt roads.”).

\(^{111}\) CCRPC, supra, at 3.11.

\(^{112}\) Id. at 10. By 1996, that number had declined to about 40%. *Id.* In 1950, farmland comprised 72.6% of the land use in the County. *Id.* at 12. By 1992, farmland only comprised 24.0% of the County’s land use. *Id.*

\(^{113}\) *Id.* at 10.

\(^{114}\) FULTON ET AL., supra, at 20.

\(^{115}\) *Id.*
disperse. Additionally, population and job growth in the suburban fringe is outpacing growth in the urban core, with overall job share and population share trending towards the newly developing suburbs.

Also, sprawl is taking a toll on the environment. Several area waterways, including Lake Champlain, are impaired for basic uses, such as fishing and swimming, due to pollution largely from development and stormwater. Air pollutants associated with automobile travel such as ozone and fine particulate matter have recently threatened to exceed safe levels. Moreover, Chittenden County now has several species that are endangered or threatened, mostly on the state level, likely due, at least in part, to the negative effects of sprawl.

This trend towards suburbanization is accelerating and Chittenden County’s growth is increasingly becoming more disperse and pushing upon the boundaries of the

116 Id.

117 See THE CHAMPLAIN INITIATIVE, supra, at 10-11; CHITTENDEN COUNTY METROPOLITAN PLANNING ORGANIZATION, Chittenden County Metropolitan Transportation Plan: Year 2003 Update: Draft 4-3 – 4-5 (September 2003) [hereinafter CCMP, Year 2003 Transportation Plan Draft Update].


120 LAKE CHAMPLAIN BASIN PROGRAM, Threatened or Endangered Species in the Lake Champlain Basin (December 2003) available at (http://www.lcbp.org/PDFs/endangered.pdf) site last visited December 13, 2004. Some of these species include the threatened Eastern Sand Darter (Ammocrypta pellucida); the endangered Lake Sturgeon (Acipenser fulvescens); and several species of mussels, many of which suffer impacts when sediment and other pollutants from development pollute waters. See e.g. RIVEREDGE ASSOCIATES, LLC, Assessment of the Potential Effects of Water Level and Flow Fluctuations on Rare, Threatened, and Endangered Species and Significant Occurrences of Natural Communities at the Niagara Power Project 5-12 (prepared for New York Power Authority, January 2004) (detailing the effects of sedimentation on mussels such as those endangered or threatened mussels found in waters affected by the CCCH).
metropolitan area.\textsuperscript{121} Between 1982 and 1997 alone, the amount of developed land in Chittenden County almost doubled from approximately 7\% to 12\%.\textsuperscript{122} Much of this growth has occurred on non-forested lands at the rural fringe of the County.\textsuperscript{123} Of the new housing units added between 1940 and 1996, 66\% were in suburban communities.\textsuperscript{124} During this time, Burlington and Winooski’s share of housing units in the County dropped from 64\% to 33\%.\textsuperscript{125}

Also, while Burlington remains the area’s largest city, growth in the urban core has essentially stagnated while growth in suburban and outlying towns continues at a steady upward rate.\textsuperscript{126} Moreover, employers and retail space in the County are moving to remote locations. Between 1980 and 1996, eighty-two percent of new jobs in the County were added in suburban communities.\textsuperscript{127} In 1980, the “traditional centers” of Burlington, 

\textsuperscript{121} \textit{See} \textsc{Lake Champlain Initiative, supra}. A prime example such disperse growth is the Taft Corners development at the Route 2A interchange of I-89 in Williston. Built in the 1990s and housing a Wal*Mart, Home Depot, Circuit City and several other single story, “big-box” stores, Taft Corners contains over 460,000 square feet of retail space – the equivalent in size to all shoppers goods (stores containing general merchandise, apparel, furniture and home furnishings, and certain miscellaneous goods) space in downtown Burlington. \textit{Id}. at 25. Another development being completed at the same interchange will add another 300,000 square feet of retail space. \textit{Id}. As of 1995, the retail square footage per capita in Chittenden County was a staggering 37.2 square feet per capita, compared with a national average of 19.3 square feet per capita. \textit{Id}.

\textsuperscript{122} \textit{Id}. at 3.4 – 3.5; \textsc{CCMPO, Year 2003 Transportation Plan Draft Update}, at 4-1 and 4-2.

\textsuperscript{123} \textsc{CCMPO, Year 2003 Transportation Plan Draft Update}, at 4-2.

\textsuperscript{124} \textsc{The Champlain Initiative, supra}, at 10.

\textsuperscript{125} \textit{Id}.

\textsuperscript{126} For instance, in 1960, Chittenden County’s population was about 75,000, with 35,531 people living in Burlington. 1960 U.S. Census. In 2001, the County’s population was 147,591, a 90\% increase over the 1960 population. \textsc{CCMPO, Year 2003 Transportation Plan Draft Update}, at 4-3. Most of this growth has occurred in the first suburban ring. Very little has occurred in Burlington. In 1970 Colchester, Essex Town and Williston had populations of 8,776, 4,440 and 3,187, respectively. 1970 U.S. Census. These towns now have populations of 16,986, 18,626, and 7,650 respectively. 2000 U.S. Census. Meanwhile, in 1970, Burlington’s population was 38,633. 1970 U.S. Census. In 2000, Burlington’s population was almost the same at 38,889. 2000 U.S. Census.

\textsuperscript{127} \textsc{The Champlain Initiative, supra}, at 11.
Winooski, Milton Village, Richmond Village and Essex Junction Village had a majority of the County’s jobs. 128 By 1990, most jobs in the County were in suburban communities. 129 This trend continued in the 1990s, where, for instance, Williston saw a job growth increase of 107%. 130 Trends in retail sales also illustrate the dramatic suburbanization taking place in the County. In 1948, Burlington, Winooski and Essex Junction Village accounted for about 90% of retail sales in the County. 131 That number dropped to less than 40% by 1992. 132

Chittenden County is expected to add another 102,503 people by 2035, an increase of 1.5% a year and an overall increase of 69%. 133 Most of this growth is projected to occur on the fringe of the County. 134 Over the next approximately 30 years, the region’s core cities of Burlington, South Burlington and Winooski are expected to grow in population by about 11,000. 135 Meanwhile, Colchester, Essex and Williston are expected to add 42,000 people over that period, almost doubling their current populations, and Bolton, Buels Gore, Charlotte, Hinesburg, Huntington, Jericho,

128 Id.
129 Id.
130 CCMPO, Year 2003 Transportation Plan Draft Update, at 4-4.
131 THE CHAMPLAIN INITIATIVE, supra, at 11.
132 Id. Another effect of the increasing suburbanization of jobs is that jobs are moving further away from low-income areas, likely making these jobs harder to access for low-income residents. With the overwhelming number of poorer people living in Burlington and Winooski, job growth in places like Williston that are likely more difficult and costly to access means that lower income people will have to take on additional expense and time to reach work locations. See id. at 54-58.
133 CCMPO, Year 2003 Transportation Plan Draft Update, at 4-10.
134 See id.
135 Id. at 4-11.
Richmond, Shelburne, St. George, Underhill and Westford are expected to grow by over 49,000 people.\textsuperscript{136}

Therefore, indications are that outer towns that still have a rural character and account for much of the remaining agricultural, forested and open land that exists in Chittenden County will experience the most intense growth.\textsuperscript{137} With residential populations projected to dramatically increase in outlying areas, it is probable that the problems of sprawl and congestion in the County will only get worse.

\textbf{B. Smart Growth and Transportation Policies in Vermont and Chittenden County.}

Vermont and Chittenden County have set forth policies that recognize the need to promote “smart growth” and to address the connection between land use and transportation. In Vermont, most planning takes place on the local or municipal level.\textsuperscript{138} However, Vermont law gives contiguous municipalities the power to create regional planning commissions by the act of either the voters or legislative bodies of each

\begin{itemize}
\item \textsuperscript{136} \textit{Id.} [DISCUSSION WITH HUMSTONE ABOUT BURLINGTON NOT BEING BUILT OUT AND GROWTH OPPORTUNITIES THAT EXIST IN THE CORE].
\item \textsuperscript{137} CCRPC, \textit{supra}, 1995 Regional Land Use Map. It is worth noting that, currently, about 15\% of the County’s land base, more than 52,000 acres, is devoted to agriculture. Chittenden County now ranks 8\textsuperscript{th} among Vermont’s 14 counties. However, the agricultural land in Chittenden County is quite valuable and the County ranks 2\textsuperscript{nd} in farm productivity. \textit{Id.} at 8.8. Recent loss in farmland in Chittenden County has already been somewhat dramatic. From 1987 to 1997, Chittenden County lost just under 15,000 acres of farmland and the average farm size dropped from 217 acres to 183 acres. See 1997 and 1992 University of Vermont, Census of Agriculture, \textit{available at} (http://crs.uvm.edu/agriculture/censusofagriculture/census1992/chittenden1992.txt and http://crs.uvm.edu/agriculture/censusofagriculture/census1997/chittenden1997.txt) \textit{sites last visited} December 10, 2004.
\item \textsuperscript{138} \textit{See} 24 V.S.A. § 4301 \textit{et seq.} (setting forth municipal and regional planning law for Vermont).
\end{itemize}
municipality. Regional planning commissions are then empowered to devise a regional plan. Municipalities use the plan as a guide in preparing local plans.

Vermont state law directs state agencies, regional planning commissions and municipalities “to plan development so as to maintain the historic settlement pattern of compact village and urban centers, separated by rural countryside.” Similarly, a state directive intended to guide statewide investment decisions says that state agencies should “[e]ncourage development in, and work to revitalize, land and buildings in existing village and urban centers.…”

The 2001 Chittenden County Regional Plan, which governs the entire County, recognizes smart growth goals, supporting growth that promotes multi-modal transportation which offers choice to users:

Traditional downtowns will be redeveloped to create enjoyable high density, mixed use, and pedestrian- and bicycle-friendly atmosphere. In addition, new downtowns and smaller commercial activity centers will be located throughout the county in a variety of sizes, densities and mixes. These centers, planned by local municipalities and coordinated regionally, will create efficient land use by mixing commercial, cultural, recreational, employment, and residential uses clustered, where possible, around multi-modal transit options. The combination of redeveloped downtown and new mixed use centers will reduce vehicle usage, reduce air pollutants, and increase personal time thereby improving our quality of life.

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139 24 V.S.A. § 4341. The agency of commerce and community development must sign off on the creation of a regional planning commission and ensure that the proposed region indeed constitutes a logical geographic and coherent socio-economic planning area. Id.

140 Id. § 4345a.

141 Id. § 4350.

142 Id. § 4302.

143 3 V.S.A. § 2293.

144 CCRPC, supra, at 1.1 (emphasis supplied).
Likewise, in the mid-nineties, the Chittenden County Metropolitan Planning Organization (CCMPO), a federally mandated transportation planning entity that defines its planning region conterminous with the County’s boundaries, composed a twenty year transportation vision for Chittenden County. In its 1997 Long Range Transportation Plan, the CCMPO sets out the following vision for Chittenden County:

Our plan supports dense centers that mix residential and commercial development to facilitate mass transportation and offers basic service accessible by means other than private, single occupant vehicles. Transportation services are, in these developments, more energy efficient, cost effective and foster a sense of community.

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145 Federal law requires that urban areas with populations of greater than 50,000 have a metropolitan planning organization responsible for comprehensive planning. 23 U.S.C.A. § 134(a)-(b). An MPO must have long-range transportation plans and transportation improvement programs, known as TIPs. Id. § 134(g) and (h).

146 This plan is mandated by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) which requires MPOs to devise a long-term transportation plan that considers the effects of transportation policy decisions on the environment and quality of life. 23 U.S.C § 134(f) and (g).

147 CHITTENDEN COUNTY METROPOLITAN PLANNING ORGANIZATION, 1997 Long Range Transportation Plan: A Twenty Year Vision for Transportation in Chittenden County (1997) (emphasis supplied). The CCMPO is seeking to update the Long Range Metropolitan Transportation Plan. The stated vision goal for the new Plan similarly recognizes the connection between transportation and land use planning:

Our transportation system enhances and connects healthy, vibrant communities. It is safe, efficient, multi-modal and accessible to all. It supports economic vitality, and is designed and operated to complement and respect our cherished natural resources and cultural heritage.

CCMPO, 2003 Draft Plan Update, at 2-3. The proposed plan’s “Vision” is supported by twelve goals, many of which specifically recognize the importance of anti-sprawl producing measures and smart growth, such as:

Goal 2: Reinforce sustainable land use patterns, such as growth centers, as set forth in local and regional plans.

Goal 5: Protect or enhance the region’s built and natural environments.

Goal 6: Create a transportation system that builds community, enhances neighborhood vitality, and minimizes noise, glare, and vibration.
Additionally, Vermont executive branch policy specifically acknowledges the pitfalls of allowing development at interchanges and directs agencies to implement policies that promote historic settlement patterns and favor existing growth centers. For instance, former Vermont Governor Howard Dean issued a directive stating that:

[D]evelopments at interchanges may … pull commerce away from traditional villages and growth centers, and undermine the economic vitality of Vermont’s downtowns;…

All state agencies and departments shall implement relevant policies and programs in a coordinated fashion to ensure that: (a) the historic settlement pattern of compact village and urban centers surrounded by rural countryside is maintained, and (b) scenic, agricultural, natural and historic features around interchanges are protected and preserved; and … (d) Vermont’s traditional settlement patterns and downtown developments are supported;…\(^\text{148}\)

Despite such enlightened policies, investment decisions still promote sprawl. Chittenden County has continued to invest in major road upgrades as growth pressure has stretched outward. Excluding normal maintenance costs, $26.5 million in public funds were expended in expanding Routes 2, 7 and 15 between 1965 and 1980.\(^\text{149}\) An additional $26.3 million dollars were expended on these roads between 1980 and 1998.\(^\text{150}\)

\(^{148}\) EXECUTIVE ORDER #01-07 OF GOVERNOR HOWARD DEAN, M.D. (Montpelier, Vermont, September 13, 2001).

\(^{149}\) THE CHAMPLAIN INITIATIVE, supra, at 21 (these figures are in 1996 dollars).

\(^{150}\) Id. at 24.
From 1992 to 1995, an average of 88% of the Vermont Agency of Transportation’s Budget was invested in highway related projects; 12% on non-highway projects like transit. The CCMPO’s Transportation Improvement Program (TIP), which authorizes funding for transportation projects in the County, devotes almost 60% of the County’s transportation budget for the next three years to road and highway capacity expansion. With the growth detailed above, pressure on the road system in Chittenden County is intensifying. This is particularly true at the arterial level. While arterials are only 17% of the County’s road mileage, they currently account for about two-thirds of all of the County’s VMT. Not surprisingly, most of these arterials roads (65%) perform at a level of service of “fair” or worse. Moreover, peak traffic and VMT in the County are currently projected to increase by 50 or 60% between 2000 and 2025. This equals an annual growth rate in VMT of between 2 and 2.4%, compared with a population growth rate of 1.5%. Additionally, traffic volume in the County is projected to increase another 360% by the year 2025, roads over capacity will increase 500% by 2025.

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152 CHITTENDEN COUNTY METROPOLITAN PLANNING ORGANIZATION, Transportation Improvement Program for Fiscal Years 2004-2006 (Adopted August 20, 2003) [hereinafter CCMPO, TIP].

153 CCMPO, Year 2003 Transportation Plan Draft Update, at 4-6.

154 Id. at 4-6. Level of service looks at the capacity, or the maximum number of vehicles that can pass through an intersection or over a roadway in a given period of time. The closer the traffic volumes are to the capacity of the roadway or intersection, the lower the level of service. Senville, supra, at note 4.

155 CCMPO, Year 2003 Transportation Plan Draft Update, at 4-11.

156 Id.
(from 6.3% to 30%), and Vehicle Hours of Travel (one vehicle traveling one hour) will increase almost 100% by 2025.157

Unless actions are taken, Chittenden County faces a sprawling and congested future.

157 CCMPO, Chittenden County Facts, available at (http://www.ccmpo.org/newsroom/fact%20sheets/facts.doc) site last visited December 13, 2004. These trends in the Burlington metropolitan region are in line with the trends for small urban areas generally. According to a leading study done by the Texas Transportation Institute, small urban areas (defined as those areas with less than 500,000 people) have seen traffic congestion problems increase quite dramatically in the last twenty years. For instance, for these small metropolitan areas, the percentage of travel in congested conditions has risen from 11% in 1982 to 29% in 2001. SCHRANK AND LOMAX, supra, at 15. The number of hours a day when congestion may occur in these small areas has risen in from less than 3 in 1982 to over 4 in 2001. Id. at 16. The percentage of roads that experience congestion during peak traffic periods in smaller regions has also approximately doubled from about 18% in 1982 to about 38% in 2001. Id. at 17.
PART III: THE CHITTENDEN COUNTY CIRCUMFERENTIAL HIGHWAY:
FORTY YEARS OF SHIFTING RATIONALES AND POLITICAL UNDERTONES

The challenge for Vermont policy makers is to reverse Chittenden County’s sprawling trend and translate the state’s and region’s lofty and well intentioned growth and transportation policy goals into results. However, Vermont’s most substantial planned current and future transportation investment is a major belt highway conceived in the mid-1960s that will slice through the suburbs of Williston, Essex and Colchester and arguably be contrary to those goals. This anachronistic project, if built, would likely be Vermont’s largest transportation project for at least a generation.

The project is the Chittenden County Circumferential Highway (CCCH) with a current total projected cost of about $223 million, a cost figure that has often escalated and may do so again. The CCCH is the central piece of a lopsided plan for the coming three years that allocates 58.2% of total funds to capacity expansion projects for the County, compared to 13% for transit projects and .8% for bicycle and pedestrian projects. As of 2003, construction of the next scheduled phase of the highway, segments A and B in Williston, was estimated to cost $48.7 million, comprising approximately one third of planned County transportation expenditures between 2004 and 2006. Eighty percent of the highway’s funding is from the federal government, the rest is from the state. Not a dollar comes from local sources.

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158 See CCMPO, TIP.


160 CCMPO, TIP, at Section 3: Summary of Financial Statistics.

161 Id. at 21-22.

162 Id.
The CCCH was conceived in an era when the full effects of highway construction were not well known and prior to the sprawl that has encroached upon Chittenden County’s countryside. Yet, with almost no consideration of other solutions, the CCCH is still Vermont’s answer to congestion problems in the County.

As will be discussed in Section IV of this thesis, the highway’s benefits are at best slim and its costs, in terms of dollars and potential environmental and quality of life impacts, are high. As such, it should be no surprise that the highway has stirred controversy. In many ways, despite the facts, the proponents of the highway have become entrenched in their support of the highway. This entrenchment may in part be fostered by a failure of opponents or other policy makers to put forth concrete alternative solutions to congestion problems. However, as will be discussed in Section V of this thesis, such solutions likely exist. The money allocated for the CCCH can be otherwise spent.\footnote{Email from William McKnight, Executive Director, CCMPO, to Wayne Senville (April 10, 2002).} What is currently needed is a new look at transportation investment for Vermont that steps back from the prejudice that forty years of buy-in gives the CCCH and asks afresh what is the most sensible, economical and effective solution to congestion in the County.

\textbf{A. The Early History of the CCCH.}

The CCCH was first envisioned as a bypass of Essex Junction Village and its congested five corners intersection.\footnote{See \textit{Vermont Department of Highways, 1966 Study}.} It evolved into a more conventional beltway

\footnotetext[163]{\textit{Id.}}

\footnotetext[164]{Email from William McKnight, Executive Director, CCMPO, to Wayne Senville (April 10, 2002).}

\footnotetext[165]{See \textit{Vermont Department of Highways, 1966 Study}.}
providing a series of interchanges at major regional roads like I-89, Route 2A, Route 15 and Route 117. \footnote{166}{See \textit{Vermont Agency of Transportation and Federal Highway Administration, Segments A-F, Final Revised Environmental Assessment Reevaluation} (August 15, 2003) [hereinafter VTRANS and FHWA, REA].}

The origins of the CCCH are tied to both the interstate system and major economic forces in Vermont. During the 50s and early 60s, in large part due to the closing of traditional manufacturing sectors such as textiles and the subsequent loss of jobs, Burlington was in many ways a floundering city in need of economic good fortune. \footnote{167}{\textit{Vermont Department of Highways, 1966 Study}, at 2.} These fortunes began to change in the 1960s. Interstate 89 was under construction, \footnote{168}{\textit{The Champlain Initiative}, supra, at 21.} providing the area with easier access to major metropolitan areas such as Boston and New York. \footnote{169}{\textit{Joe Sherman, Fast Lane on a Dirt Road: Vermont Transformed 1945-1990} 100, 101 (The Countryman Press, 1991) [hereinafter Sherman]; \textit{State of Vermont Environmental Board, Act 250: A Guide to Vermont’s Land Use Law} 2 (November 2002); \textit{see also Gutfreund, supra}, at 193 (discussing reports claiming the interstates to be the saving grace of Vermont’s economy); CCRPC, \textit{supra}, \textit{7.2} (stating that, “The state became a better place to do business as the interstate highway system was completed ….”).}

Also, in 1957, the Burlington area managed to attract a major IBM plant. \footnote{170}{\textit{Jan Albers, Hands on the Land: A History of the Vermont Landscape} 305 (MIT Press for the Orton Family Foundation, 2000) [hereinafter Albers]; CCRPC, \textit{supra}, \textit{3.3}.} The plant, which is located in Williston and Essex along the Winooski River, has brought with it thousands of high paying jobs. \footnote{171}{\textit{Albers, supra}, at 305 (stating that when the plant first opened it employed 400 workers and grew to employ 7000 workers by 1999); CCRPC, \textit{supra}, \textit{3.3} (calling IBM “the most significant economic contributor to Vermont”).} The IBM plant quickly turned into an important economic player in the state as it became Vermont’s largest private sector employer. \footnote{172}{\textit{See id.}} IBM not only added additional transportation needs to
Chittenden County, but it also fed an urge in the area to modernize.\textsuperscript{173} In the 1960s, becoming modernized meant adapting the region for the automobile age.\textsuperscript{174}

1. \textit{The Genesis of the CCCH: A Desire to Accommodate the Automobile.}

Between 1957 and 1964, the Vermont Department of Highways conducted a series of studies for the Burlington area, which was then defined in a relatively limited manner.\textsuperscript{175} As a result of these studies, in 1966, the Vermont Department of Highways completed a regional planning report.\textsuperscript{176} The 1966 report sought to:

Design a general highway plan to serve adequately the traffic volumes estimated for 1985 and produce a system of arterial streets which would complement the location of I-89 and I-189 as well as provide an arterial transportation system consistent with modern standards [and] to evaluate the urban traffic problems in the Greater Burlington Urban Area and to present a long range arterial highway plan for an integrated system of arterial highways to serve both local and thru traffic in the urbanized area of Burlington, Winooski, Essex Junction, South Burlington and part of Williston and Colchester.\textsuperscript{177}

\textsuperscript{173} See e.g. VERMONT DEPARTMENT OF HIGHWAYS, 1966 Study, at 163 (where the Essex Town and Junction Planning Commissions discuss increased traffic from the IBM plant in a letter expressing support of and commenting on an Essex bypass idea, a precursor to the CCCH).

\textsuperscript{174} See VERMONT DEPARTMENT OF HIGHWAYS, 1966 Study.

\textsuperscript{175} CHITTENDEN COUNTY METROPOLITAN PLANNING ORGANIZATION, Fact Sheet on History of the Chittenden County Circumferential Highway (CCCH) Planning Efforts 3 (April 1999) [hereinafter CCMPO, Fact Sheet]. The final report only considered Burlington, Winooski, Essex Junction, South Burlington and parts of Williston and Colchester. This is a nod to how much more rural the region was in the mid-sixties. At the time of the study only 30\% of the County was used for urban purposes and 65\% of the County’s land area was farmland. VERMONT DEPARTMENT OF HIGHWAYS, 1966 Study, at 5 and 9. However, in 1966, the growth challenges currently facing the County were foreshadowed. At the time, growth in Essex, Williston, Colchester and South Burlington were already outpacing growth in Burlington. Id. at 4 and 5. Tellingly, the study noted that, “This growth, transcending local boundaries to unite originally separate communities and to envelop areas until recently rural in character, exemplifies the continuing trend brought about by increased use of the motor vehicle.” Id. at 52 (emphasis supplied).

\textsuperscript{176} Id. at 3; VERMONT DEPARTMENT OF HIGHWAYS, 1966 Study.

\textsuperscript{177} VERMONT DEPARTMENT OF HIGHWAYS, 1966 Study, at x and 1.
The report recommended highway upgrades including an “Essex Junction Belt Line expressway,” designed to loop around Essex Junction’s five corners as a four-lane, divided highway to be just less than 4 miles in length.\textsuperscript{178}

For the most part, the 1966 report did not take into account the land use or environmental impacts of the recommended highway upgrades. The report assumed that growth in the urban area would occur around already established “nuclei” and new growth nuclei that would occur at interstate interchanges.\textsuperscript{179} The report further assumed that, over time, “land areas having low-density uses tend to be absorbed by neighboring uses of higher density.”\textsuperscript{180} While the report was correct in anticipating growth at interchanges, it did not address the potential reach and ramifications of such growth. Nor did the report express the type of concerns regarding preserving traditional growth patterns and open space seen in Vermont and regional policies today. The report noted that farmland will be lost to urban expansion, but brushed this off by stating that “agriculture will continue to be an important part of the region’s economy.”\textsuperscript{181}

While today a gridded street system is often considered as being efficient because it gives travelers various routes options rather than funneling drivers onto a limited number of arterial roads, the 1966 report viewed the grid-like, traditional growth center street network as an impediment to, rather than a promoter of, sound transportation and

\textsuperscript{178} Id. at 141-149. The report also recommended a Burlington Beltline, a four-lane highway about 8 miles in length to run north of the City connecting to I-89 in Colchester and running south of the City to connect with I-189. Id. at x, 63-90. The Study further recommended relocating state highway 2A in Williston to make automobile traffic move more easily through the Essex and Williston area. Id. at x, 188-194.

\textsuperscript{179} Id. at 9.

\textsuperscript{180} Id.

\textsuperscript{181} Id. at 5.
growth.\textsuperscript{182} “[T]he problem,” the report concluded, “stated in general terms, is one of a street network based upon traffic needs of an earlier day. The motor vehicle has created traffic of a magnitude and character which cannot be accommodated by a 19\textsuperscript{th}-century circulation system.”\textsuperscript{183}

Thus, the genesis of the CCCH came from a desire to create an automobile focused transportation system based on large capacity arteries that bypass traditional growth centers. Forty years of experience has shown that this is often a recipe for sprawl.

2. \textit{Shaken Faith in the Automobile, but the Idea for the CCCH Continues to Evolve.}

In 1977, another study again endorsed the Bypass/Connector idea.\textsuperscript{184} Looking again at a limited Burlington region, the Chittenden County Regional Planning Commission (CCRPC) adopted a \textit{Greater Burlington Federal-Aid Urban Area Transportation Study} which recommended an “Essex-Williston Connector,” a “Burlington-Colchester-Essex Circumferential Highway” and an “Essex Junction Bypass.”\textsuperscript{185} While the 1977 study reflected some notable changes in thinking from the 1966 study, these changes did not lead to an abandonment of the highway project.

\textsuperscript{182} \textit{Id.} at 63.

\textsuperscript{183} \textit{Id.} Similarly, in assessing traffic problems in Essex Junction, the report stated that, “Essex Junction’s traffic problem is this seen as growing out of a circulation network inherited from the earliest of development.” \textit{Id.} at 141.


\textsuperscript{185} \textit{Id.} The CCRPC performed the study on contract from the Vermont Department of Highways to conduct urban area transportation planning under a mandate from federal law. \textit{Id.} at 3; CCMPO, \textit{Fact Sheet}, at 4. The study only looked at Burlington, Winooski, Essex Junction, and parts of Williston, Essex Town and Colchester. CCRPC, \textit{1977 Study}, at ____.
Unlike the 1966 report, the 1977 report recognized that an automobile only focus for transportation was flawed, stating that

Previous transportation planning in the urban area had been orientated toward the highway network because the private automobile was the primary mode of travel; however, recent environmental and energy concerns in addition to a relatively unstable national economy has mandated the need to carefully evaluate the enhancement of alternative modes of transportation with an ultimate goal of developing an overall balanced transportation system.186

The 1977 report had a slightly more evolved view of land use concerns than the 1966 report. It noted that, since the 1966 report, growth had encroached from downtown areas into “previously rural tracts” and that the populations of South Burlington, Williston, Essex and Colchester were dramatically increasing.187 The report realized that this growth was a concern, stating there was “a growing awareness by area residents of the need to preserve the rural character prevalent in the more outlying areas of the County.”188 Also, the report acknowledged that, “The pattern of land use is a prime factor in developing or improving the transportation network for a given use.”189

However, the report concluded that new growth in the region would be absorbed by existing growth areas and seemed to anticipate more compact, orderly growth than the area has experienced.190 The report ultimately stated that “continued residential and commercial development is essential, though it is anticipated that this activity will be

187 Id. at 16 and 19. The report noted that populations in South Burlington, Williston, Essex and Colchester had nearly tripled since 1950. Id. at 19.
188 Id. at 107.
189 Id. at 12.
190 See id. at 107.
absorbed by presently developed areas, which have the facilities and land capacity to best accommodate growth.” The report goes on to find that areas “near downtown Burlington, Winooski, and Essex can be expected to grow and increase in density, through the development of more multi-family dwellings and smaller lot sizes.” As such, the report predicted that most future population growth will occur in existing growth centers, rather than the less developed suburban and outlying areas where growth has instead occurred.

While abandoning the 1966 report’s desire to build a future based solely around the automobile, the 1977 report uses its inaccurate forecast of the area’s future growth as a new justification for the bypass highway. The report concluded that “[g]rowth in rural and suburban areas of the GBUA has increased the demand for transportation corridors into downtown Burlington, Winooski and Essex Junction” because the “bulk of job opportunities and services are still concentrated in the downtown areas.” As such, the 1977 study justified highway bypasses as being needed to provide outlying residents easier access to concentrated growth centers where jobs and shops would be, as well as

191 Id.

192 Id. at 108

193 Id. at 111. The 1977 report mistakenly projects that most growth will continue to occur in the traditional centers of Burlington, Winooski and Essex Junction Village. For instance, it projects the year 2000 populations of Burlington, Winooski and Essex Junction Village to be 59,388, 12,500 and 12,400 respectively. Id. The actual 2000 populations of these towns were 38,889, 6,561 and 8,591 respectively. 2000 U.S. Census. Meanwhile, the report predicted the populations of the portions of Essex Town, Williston and Colchester within the then defined Greater Burlington Urban Area, which did not include all parts of these towns, to be 5,200, 2,400 and 1,800 respectively. CCRPC, 1977 Study, at 111. These towns’ total populations as of 2000 are 18,626, 7,650 and 16,896 respectively. 2000 U.S. Census. While this thesis does not have data as to how much of this current population is within the Greater Burlington Urban Area as defined by the 1977 report, it is reasonable to assume the report’s 2000 predictions were low.

194 Id. at 16. Like the 1966 study, the 1977 study still saw traditional downtown growth patterns as “constraints” to good transportation, creating a need for outside residents to be able to avoid having to travel through them. Id. at 9.
ways to bypass these areas. In fact, the opposite has occurred and growth has migrated to the suburbs.

Interestingly, the 1977 report points to the past viability of public transit in the Burlington area, detailing that ridership on buses in 1970 was less than one-fourth what it was in 1946 when the population in Burlington area was more densely located in growth centers. The report finds that the decline of bus service from the mid-forties to 1970 resulted from “serious passenger losses … due to the changing pattern of land use and the emergence of the automobile as the major means of transportation.” Similarly, in evaluating the potential viability of commuter rail, the report stated that, “Passenger rail service on existing trackage has the potential to effectively serve the commuting population if routes can be structured to connect areas of concentrated population and employment.” While the 1977 report points to an earlier era when dense settlement patterns allowed public transit to work in the region and began to recognize that automobile dependent growth works against transit, it nevertheless endorsed new

195 Id. at 9, 205 and 206. The highway proposed in the 1977 study would stretch from Route 127 in Burlington, through Colchester, intersect at I-89 in Colchester, continue through to Essex and terminate in Essex at Route 15, not reaching Williston as the current CCCH proposes. Id. at 205-206. However, unlike the 1966 report, the 1977 report also surveyed an array of transportation modes such as rail, bus, water, air, taxi and bicycle. Id. at v. The 1977 report suggests studying the feasibility of light rail, finding that commuter service between Shelburne and Essex would “be competitive with the private automobile, provide service to a major portion of urban area population, and be responsive to future energy conservation programs,” as well as examining the use of increased bus service. Id. at 200 and 202.

196 See id.

197 Id. at 62.

198 Id. at 125 (emphasis supplied).
highway bypasses using a mistaken forecast that downtown areas would continue to absorb the County’s growth.199

3. Out of the Conceptual Phase and Yet Another Rationale.

The 1966 and 1977 studies failed to move the highway beyond the conceptualization stage. The next few years would see efforts at funding and planning for the highway take shape. In 1982, with the help of Vermont Senator Robert Stafford, a $50 million CCCH Demonstration Project was federally approved.200 In 1983, the Vermont General Assembly authorized the Vermont Agency of Transportation (Vtrans) to accept and administer the federal demonstration funds.201 Also, in 1983, the CCMPO was formed.202 Among its first acts was to adopt a Regional Transportation Plan, commissioned by Vtrans, recommending construction of the CCCH from I-89 in Williston to Route 127 in Colchester.203

The 1983 report sought to:

[A]ddress certain planning-related issues early in the project development process: (1) the practical alignment alternatives; (2) the future corridor travel demands; (3) the identification of a preferred alignment, based upon engineering and environmental considerations; (4) the basic

199 See id. at 107-108 (where the report concludes that much of the anticipated growth for the Burlington urban area, narrowly defined by the study, can be largely expected in developed areas through increased density and smaller lot sizes).

200 CCMPO, Fact Sheet, at 3.

201 Id.

202 Id.

203 See WILBUR SMITH AND ASSOCIATES, Final Report: Planning Study: Chittenden County Circumferential Highway, Chittenden County, Vermont (prepared for The Vermont Agency of Transportation in cooperation with The Chittenden County Circumferential Highway District, November, 1983) [hereinafter WILBUR SMITH].
design concept, including lane arrangement and intersection treatment; (5) the prospects of constraining vehicular travel demand through transportation systems management; and (6) the estimated cost of designing and building the Circumferential Highway.\textsuperscript{204}

The report specifically laid out plans for a four lane highway from I-89 in Williston to Colchester that was 15.2 miles long with an estimated cost of $71.1 million.\textsuperscript{205} The recommended highway alignment was purportedly meant to minimize environmental and land use costs while increasing mobility.\textsuperscript{206}

This report differs from the 1977 report in both its land use projections for the County and its justification for constructing the highway. Unlike the 1977 report, the 1983 report does not project strong growth in the city of Burlington.\textsuperscript{207} It instead more accurately projects growth both for jobs and for population to trend towards suburban areas.\textsuperscript{208} It concludes that:

> Local transportation in the Greater Burlington area has traditionally focused upon the central area of Burlington. However, opportunities for employment and other activities in suburban communities have increased in relation to those in central Burlington. Consequently, the extent of circumferential travel has increased.\textsuperscript{209}

\textsuperscript{204} \textit{Id.} at S-1.

\textsuperscript{205} \textit{Id.} at Table S-1, page S-4.

\textsuperscript{206} \textit{See id.} at IV-1.

\textsuperscript{207} \textit{Id.} at Table II-4, page II-13. The 1983 report, unlike the 1977 report, sees only modest growth for Burlington, from an estimated 1983 population of 39,270 to a projected 2004 population of 41,000, an estimate that has borne out to be fairly realistic. \textit{Id.}

\textsuperscript{208} \textit{Id.} The 1983 report projects substantial growth in the suburbs. The report predicts that Williston will go from an 1983 estimated population of 4,120 to a 2004 projected population of 8,000; Essex Town from an 1983 estimated population of 8,110 to a 2004 projected population of 12,000; Essex Junction from an 1983 estimated population of 7,690 to a 2004 projected population of 9,000; Colchester from an 1983 estimated population of 14,180 to a 2004 projected population of 17,000. \textit{Id.} These projections have borne out to be more accurate than the 1977 study’s projections.

\textsuperscript{209} \textit{Id.} at I-5. Moreover, the report expressly cites IBM expansion plans in Williston as a growth pressure necessitating the CCCH. \textit{Id.} at II-3.
Thus, the 1983 report cites growth of jobs and other activities within the suburbs themselves as justifying the need for the highway.\(^{210}\) No longer is the highway needed to facilitate movement from remote locations to and around traditional growth areas; it is now needed to service movement from suburb to suburb.\(^{211}\) Nowhere does the 1983 report express alarm at this growth trend or analyze whether or not building a circumferential highway will exacerbate it.\(^{212}\)

Additionally, the report did not look at alternative solutions to building a highway. The report summarily rejected options to reduce the scale of the project.\(^{213}\) For instance, the report looked at using expanded bus service and ridesharing to allow for a two lane highway, but placed most of the onus for these programs on industry and locally funded projects to facilitate rideshare programs, like constructing park and ride lots.\(^{214}\) While the report acknowledged that this approach would be cheaper than a full scale, four lane highway, it rejected it largely due to lack of data from urban areas similar to the Burlington region.\(^{215}\)

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\(^{210}\) See id. at I-5.

\(^{211}\) Id. The report states that, “More than one-third [of trips within the study area] are entirely within the influence area [parts of Williston, Essex and Colchester], suggesting a strong need for the Circumferential Highway.” Id. at II-31.

\(^{212}\) The report notes that the corridor itself is relatively free from development, containing agricultural lands, fields, forests, wetlands, and conservation areas. Id. at II-5. But the report does not seem concerned with whether the highway’s construction would destroy or degrade these areas. The report merely states that the study corridor, which consists of a small area surrounding the corridor of the CCCH’s proposed construction, will continue to be open space, but “[t]here will be considerable pressure to expand residential development in order to accommodate the large influx of population expected before the end of the century.” Id. at II-6.

\(^{213}\) Id. at V-37 – 41.

\(^{214}\) Id. at V-37 – 39.

\(^{215}\) Id. at V-39 – 41.
The report similarly dismissed other approaches to manage existing roads and infrastructure that might allow for a scaled back project. The report concluded that using less frequent interchanges, a high occupancy vehicle travel lane during peak demand hours and reduced speed limit would merely shift pressure from the proposed highway to local roadways.\textsuperscript{216} The report discussed the possibility of land use strategies to discourage development from possible intersections and discouraging land use patterns that contribute to increased traffic volumes.\textsuperscript{217} But the report also dismissed this approach, saying:

\begin{quote}
The land use/zoning control strategy would run counter to the growth trends of past several decades and would require severe constraint on building permits, not only in the vicinity of the Circumferential Highway but also of any area which might have a significant effect upon travel on the Highway.\textsuperscript{218}
\end{quote}

This conclusion is more an acceptance of sprawling growth patterns than a serious examination of approaches that might change land use trends and create positive transportation results.\textsuperscript{219}

The shifting rationales for the highway over the first roughly 20 years of its conception begs a question the state never adequately asked: does this highway make

\begin{itemize}
\item \textsuperscript{216} Id. at V-34.
\item \textsuperscript{217} Id., at table IV-13, page IV-34, V-35 and 36.
\item \textsuperscript{218} Id. at V-36.
\item \textsuperscript{219} See id.
\end{itemize}
sense? In the most recent 20 years the state has done no better job of asking this important question. Instead, the CCCH is still defiantly promoted as a fix for the area’s congestion problems and many policy makers are turning a blind eye to both its high costs and near negligible benefits.

B. 1983 through the 1990s.

Now that the highway had demonstration project funds and a planned alignment, it appeared ready to move forward. The next major study of the highway was an Environmental Impact Statement (EIS) conducted by Vtrans pursuant to NEPA, a federal statute more thoroughly discussed in Section IV of this thesis that, in sum, requires federal funded or sponsored actions to undergo a procedural consideration of potential environmental impacts. A Draft EIS was performed in 1985 and Final EIS (FEIS) was issued in 1986. The FEIS concluded that the project was needed. The FEIS also determined that the environmental impacts from the project would not be severe.

The FEIS’s alternatives analysis consisted primarily of three alternative alignments for the highway, along with rebuilding existing roadways, alternative modes

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220 It is also worth noting that public input for these early studies were generally limited. It is presumed that the 1966 report received local municipal board approval and that Vtrans made a presentation to the Vermont State Assembly regarding the 1977 report, but little is documented. Public involvement with the 1983 report appears to have been greater than the previous studies. In November of 1983, the same month the report was released, a public information and comment meeting was held where approximately 270 citizens and public officials attended. CCMPO, Fact Sheet, at 5.


222 CCMPO, Fact Sheet, at 6.

223 See [VTRANS, 1986 FEIS, at AR 20004832 et seq].

224 See id.
of transportation, a limited build alternative, a Susie Wilson Road (a road in Essex) connector, and no-action. The FEIS ultimately favored an alignment alternative consisting of a 15.8 mile limited access highway arcing from I-89 in Williston to the northwest through Essex and Colchester and terminating at VT Route 127 in Colchester. The proposed alternative was sectioned into 10 segments, as can be seen in the map in the Appendix. Segments A and B would run north and slightly east from I-89 in Williston to Essex and service the IBM plant. Segments C-F, which have been constructed, run in an arc to the north and west around Essex Junction. Segments G-J would run from Essex to the west and slightly north through Colchester, ultimately connecting with existing Route 127, which services Burlington’s new north end. The proposed alternative would have several exits along the way, including two interchanges with I-89 and other interchanges with major roads such as VT 117, VT 2A and Susie Wilson Road.

Even in 1986 and almost certainly today, the 1986 FEIS is arguably a flawed document. It did not consider certain transportation alternatives such as rail transit or a land use based alternative – alternatives which have been shown to have promise over the last 18 years. The FEIS did not examine the cumulative environmental impacts (the impacts of the highway combined with similar major projects such as other road

\[\text{See id. at AR 20005005-5027}; \text{ Senville, supra, at 18-20.}\]

\[\text{See [VTRANS, 1986 FEIS, at AR ____________].}\]

\[\text{See id. at AR __________; Senville, supra, at 20.}\]

\[\text{See Senville, supra, at 19-20; DMJM+HARRIS, Burlington-Essex Corridor Alternatives Analysis Phase IA Report 4-27 – 4-72 (prepared for the Chittenden County Metropolitan Planning Organization, August 2002) [hereinafter DMJM+HARRIS, Burlington-Essex Corridor Alternatives Analysis] (discussing commuter rail alternatives for the Burlington region).}\]
widenings) of the project.\textsuperscript{229} It assumed that no new growth would occur from the highway, despite stating that the CCCH was needed to alleviate restrictions on economic development within the County.\textsuperscript{230} The FEIS also did not look at certain air quality impacts, like the emissions of HAP and GHG.\textsuperscript{231}

At the time, environmental groups in the state were concerned about the highway, but their input into the EIS process was somewhat limited.\textsuperscript{232} For the EIS, written input from organized, local non-profit environmental groups consisted of a four page letter from the Vermont Natural Resources Council (VNRC) and a two page letter from the Vermont Group of the Sierra Club written in response to the 1985 Draft EIS.\textsuperscript{233} The VNRC letter generally expressed concern over potential growth impacts from the project, which it insisted must be analyzed,\textsuperscript{234} as well as concerns over what VNRC viewed as a

\textsuperscript{229} \textit{Senville, supra}, at 22. “There is no discussion whatsoever in the FEIS of the potential cumulative impacts of [other road projects in Chittenden County] or of major development projects in the area that may have similar impacts [as the CCCH] on environmental resources, such as agricultural lands, water quality and air quality.” \textit{Id}. Applicable regulations define a cumulative impact analysis as, “[T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7

\textsuperscript{230} \textit{See Senville, supra}, at 64; [\textit{VTRANS}, 1986 FEIS, at AR 20005006] (stating that the No Action alternative would “limit future development opportunities” and “inhibit future economic development”).

\textsuperscript{231} \textit{See Senville, supra}, at 46.

\textsuperscript{232} \textit{See e.g.} Letter from Shelly McSweeney, VNRC Representative and Eric Palola, Associate Director, Vermont Natural Resources Council to Secretary Susan C. Thompson, Vermont Agency of Transportation, September 30, 1985 (offering comments critical of the CCCH to the 1985 Draft EIS) [VNRC 1985 DEIS Comment Letter]; Letter from Diane Geerken, Vermont Group, Sierra Club to Susan C. Thompson, Secretary, Vermont Agency of Transportation, September 19, 1985 (same) [Sierra Club 1985 DEIS Comment Letter].

\textsuperscript{233} \textit{See VNRC 1985 DEIS Comment Letter; Sierra Club 1985 DEIS Comment Letter.}

\textsuperscript{234} VNRC stated that, “The Chittenden County Circumferential [H]ighway represents the most significant piece of infrastructure proposed for this area in many years. As such, the CCCH will largely influence growth and settlement patterns within the highway perimeter and without as it affects more distant rural communities. The Council is particularly concerned that this highway not set the stage for accelerated
poorly articulated and unclear purpose for the highway.\textsuperscript{235} The VNRC letter also criticized the DEIS for failing to consider alternatives to the highway.\textsuperscript{236} But while VNRC made general recommendations of alternatives, it did not lay out any specifics.\textsuperscript{237} The Sierra Club comments were also brief, focusing on impacts to wetlands, park lands, a unique pine patch in an affected woodland, and the DEIS’s failure to look at secondary growth impacts.\textsuperscript{238}

Also, shortly after the FEIS was issued, as a result of a challenge to a state land use permit that was brought by environmentalists, an agreement for mitigation was entered into by Vtrans and incorporated into the state land use (Act 250) permit for the project.\textsuperscript{239} This agreement was supposed to address agricultural land use concerns by having the CCCH host towns (Williston, Essex and Colchester) establish mitigation programs to preserve farmland.\textsuperscript{240} The agreement also required a study that was

\begin{itemize}
\item \textsuperscript{235} Id. at 1-2.
\item \textsuperscript{236} Id. at 2. The letter stated that, “The reliance on future automobile solutions to solve the current automobile problems, over a 25 year project life, make the Chittenden County transportation network dependent on automobile use and discourages other more energy efficient modes of transportation. Congestion and environmental degradation from sustained automobile traffic merits consideration of transportation alternatives.” Id.
\item \textsuperscript{237} Id. For example, VNRC suggests that a bicycle corridor be added to any alignment, and that buses, park and rides, shuttle services, carpool lanes and other alternatives be looked at as ways of scaling back the project. Id.
\item \textsuperscript{238} See Sierra Club 1985 DEIS Comment Letter.
\item \textsuperscript{239} See State of Vermont, Master Land Use Permit #4C0718, Circumferential Highway, State of Vermont, Agency of the Transportation (December 5, 1988).
\item \textsuperscript{240} See id.; HUMSTONE SQUIRES ASSOCIATES AND VERMONT GEOGRAPHIC INFORMATION SYSTEM, SCHOOL OF NATURAL RESOURCES, UNIVERSITY OF VERMONT, \textit{An Assessment of the Secondary Impacts of the Chittenden County Circumferential Highway on Agricultural Land} (prepared for The Vermont Land Trust, November 1987) [hereinafter HUMSTONE SQUIRES]; Email Correspondence from Attorney Mark Sinclair, Senior Attorney, Conservation Law Foundation (December 7, 2004).
\end{itemize}
commissioned by a local non-profit, the Vermont Land Trust, which focused on the
CCCH’s impact on farmland in the County.\footnote{See \textit{Humstone Squires}, \textit{supra}; Email Correspondence from Attorney Sinclair (December 7, 2004).} The report ultimately echoed the
conclusions of the FEIS finding that “[a] circumferential highway will not cause growth
or development; rather, it will influence the distribution of that growth.”\footnote{\textit{Humstone Squires}, \textit{supra}, at ii.}

Despite the land use permitting challenge, the FEIS was not legally challenged at
the time of its release and partial construction of the CCCH commenced. Nor was there a
serious consideration by the state or the Federal Highway Administration (FHWA) of
what appeared to be fundamental growth related questions: what would the real effects of
this distribution of growth be and, if the CCCH really wasn’t going to create any new
growth, economic or otherwise, was building a highway that would promote such a
redistribution of growth sound policy?

In October of 1993, Segments C-F between VT 117 and VT 2A in Essex and a
relocated Susie Wilson Road, also in Essex, was completed as a two lane road.\footnote{\textit{CCMPO}, \textit{Fact Sheet}, at 2.} The
CCCH then stewed on the backburner for most of the nineties. Meanwhile, there was
some minor erosion of political support for the CCCH. For instance, the Burlington City
Council voted not to support the project in 1998.\footnote{\textit{Taxpayers for Common Sense and FOE}, \textit{supra}, at 53; Email Correspondence from Chapin Spencer, Burlington City Council Member 1998-2002 (December 8, 2004).} Also, in the late 1990s, efforts were
made to form an alliance of rural outlying towns and core cities to defeat the CCCH at
the CCMPO.\textsuperscript{245} However, these efforts fell short and the CCMPO continued to support the highway.\textsuperscript{246}

Moreover, in the late 1990s, certain groups, such as the Vermont Public Interest Research Group (VPIRG), Conservation Law Foundation (CLF), Friends of the Earth (FOE) and Sierra Club made stopping the highway a priority, putting forth educational materials opposing the highway and preparing for possible legal challenges to the project.\textsuperscript{247} The highway also received attention from national environmental and governmental watchdog groups as an example of a wasteful and sprawl inducing transportation investment.\textsuperscript{248} But while no further construction occurred, the CCCH remained alive and not even the highway’s opponents put forth any viable alternative solutions.

\textbf{C. The CCCH Becomes A Priority for Policy-Makers.}

Early this decade, economic, procedural and political factors aligned to make completion of the CCCH a front-burner issue for Chittenden County. The economic boom of the nineties ended, especially for the technology sector, and it had negative impacts for IBM. In 2002, IBM had significant layoffs at the Vermont plant.\textsuperscript{249} Given

\textsuperscript{245} Email Correspondence from Former Councilmember Spencer (December 8, 2004).

\textsuperscript{246} \textit{Id.; see} TAXPAYERS FOR COMMON SENSE AND FOE, \textit{supra}, at 53.

\textsuperscript{247} \textit{See e.g.} VERMONT TRANSPORTATION ALLIANCE, \textit{Chomp! There Goes the Neighborhood: The Circ looks like a great idea. But is it?} (undated) (fact sheet published by a coalition of environmental groups, including VPIRG, CLF, FOE and Sierra Club, prior to the issuance of the EA as part of an educational effort regarding the negative impacts of the CCCH).

\textsuperscript{248} \textit{See} TAXPAYERS FOR COMMON SENSE AND FOE, \textit{supra}, at 53 (characterizing the CCCH as a wasteful and sprawl inducing highway); SIERRA CLUB, \textit{Smart Choices, Less Traffic} (2002) (listing the CCCH as a “Caution! Wrong Way” project).

\textsuperscript{249} Aki Soga, “IBM Cuts Nearly 1,000 Jobs at Essex Junction,” BURLINGTON FREE PRESS (June 5, 2002).
the age of the plant and other uncertainties in the technology sector, jitters formed in the Burlington community regarding IBM’s future. Desiring to help IBM, certain politicians and business leaders hoped constructing the CCCH would foster economic growth and secure IBM’s future in the area. Key among these politicians was Jim Douglas, the Republican State Treasurer elected to the governorship in 2002, who made constructing the CCCH a centerpiece of his campaign and, once elected, a priority of his administration.

IBM has expressed that it views the CCCH as being important to the overall functioning of its plant. See Virginia Landowner Simmon, “A Big Fish in Chips: IBM’s Essex Junction Plan Is One of the World’s Top Producers of Semiconductor Technology,” BUSINESS PEOPLE VERMONT (March 3, 2002) available at [http://www.vermontguides.com/2002/3-Mar/ibm.html](http://www.vermontguides.com/2002/3-Mar/ibm.html) site last visited October 8, 2004 (quoting an IBM official stating that, “Because [IBM doesn’t] have [the CCCH], it has raised significant concerns about traffic and it becomes an issue when we try to build or do other activities that require permits.”); Editorial, “The Circ Roadblock,” BURLINGTON FREE PRESS (May 16, 2004) (stating that “[t]he road is important to IBM.”) Likewise, many businesses and development interest groups have become advocates of the CCCH as well, ostensibly claiming that it is needed to bring Chittenden County’s infrastructure in line with the needs of the modern era and to promote job creation and economic growth. See GREATER BURLINGTON INDUSTRIAL CORPORATION, 2003 Fall Newsletter (2003) available at [http://www.vermont.org/gbic/fall03.html](http://www.vermont.org/gbic/fall03.html) site last visited October 8, 2004; ETHAN ALLEN INSTITUTE, Commentary, Lessons From the IBM Layoffs (December 2001) available at [http://www.ethanallen.org/commentary.php?commentary_id=180](http://www.ethanallen.org/commentary.php?commentary_id=180) site last visited October 8, 2004 (where a pro-business think tank stated that “[When choosing where to cut company jobs] one might suspect that [IBM] included [in its decision making] the continued stalling of the Circumferential Highway, which IBM considers very important for getting supplies, products, and its 8000 employees in and out of its job site.”).

See Matt Sutkoski, “Circ Highway Path Opens Up,” BURLINGTON FREE PRESS (November 1, 2002) (stating that with a worsening economy in 2002 in Vermont and IBM’s assertion that the CCCH is important for the functioning of its Essex plant has boosted political support for the highway); see also, Matt Sutkoski et al., “The Long and Winding Road: Circ Delays Leave Towns in Limbo,” BURLINGTON FREE PRESS (March 22, 2004) (quoting Town Managers in Essex and Colchester stating that IBM may leave unless the CCCH is built); Sue Robinson, “Dean: State’s Limited in Influencing IBM,” BURLINGTON FREE PRESS (May 14, 2002) (quoting business leaders stating that building the CCCH is an important measure in ensuring IBM’s future in Vermont).

Governor Douglas Press Release, “Governor Douglas Breaks Ground on Circ. Highway: Ceremony Represents Commitment to Job Creation” (December 17, 2003) (where, in a ceremonial groundbreaking for the highway that occurred before progress was halted by a Court ruling, Governor Douglas expressed his fondness for highways, stating, “Highways … are the pulsing veins of healthy economy. … That is why I will continue to fight for critical transportation projects across the state [such as] the Circ Highway.”); Andy Netzel, “Circ Rebid Can’t Smooth All the Bumps,” BURLINGTON FREE PRESS (December 17, 2003) (where Governor Douglas is quoted stating that, “This Circ is a major priority for me…. “).
Also, a reevaluation of the 1986 FEIS was presented for comment in August of 2002, just before the 2002 gubernatorial election. The reevaluation of the FEIS, which took shape as an Environmental Assessment (EA) (a document intended to assess whether a project’s environmental impacts are substantial enough to warrant a full study), spanned about 1000 pages in concluding that an update or supplement of the 1986 FEIS was not needed in order for the next phase of the project to proceed. Extensive comments on the EA were filed by several environmental groups, concerned citizens, and, most notably, the U.S Environmental Protection Agency (EPA) criticizing the conclusions of the EA. EPA called for a Supplemental EIS to be performed.

However, due in large part to lobbying of the Bush Administration by then GOP candidate Jim Douglas, who at the time was locked in a tough race with his Democratic opponent, the CCCH was picked for expedited NEPA review by the Administration in October of 2002 under Executive Order 13274. Moreover, in October of 2002, shortly

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253 See [VERMONT AGENCY OF TRANSPORTATION AND FEDERAL HIGHWAY ADMINISTRATION, EA Reevaluation (August 9, 2002)][hereinafter VTRANS AND FHWA, 2002 EA].

254 Regulations state that an EA should be a “concise” document that “[b]riefly provide[s] sufficient evidence and analysis” for detailing whether to prepare an EIS or FONSI. 40 C.F.R. § 1508.9. [EXPAND ON ROLE OF EA/FONSI].

255 See [VTRANS AND FHWA, 2002 EA].

256 Unlike the brief comments filed in 1985, environmental groups, such as CLF, FOE, VPIRG, Sierra Club and VNRC filed comments that ultimately numbered in the hundreds of pages and contained extensive analyses of why the highway would not provide the benefits detailed in the EA and FEIS and the negative environmental impacts the highway would have. See [VTRANS AND FHWA, REA, Appendix G (Comments)].

257 Letter from Robert W. Varney, EPA Region I Administrator to Kenneth Sikora, Federal Highway Administration, Environmental Program Manager (September 6, 2002) [hereinafter Varney Letter].

258 Id. at 3 (“[W]e believe that a supplemental EIS would best inform the public on the most cost-effective and environmentally sound manner in which to improve the transportation system in Chittenden County.”).

259 See Nancy Ramsen, “Circ Closer to Construction,” BURLINGTON FREE PRESS (May 1, 2003) (stating that, “In the fall, Gov. Jim Douglas used his friendship with President Bush to put the next 3.8 mile leg of
after the Administration picked the CCCH for “fast-track” review, Vermont’s Senators Leahy and Jeffords wrote a letter urging the FHWA and EPA to cooperate with each other to “advance consideration of priority transportation projects.”

FHWA released a Revised EA (REA) in May of 2003, largely echoing the first EA, with a final version released on August 15, 2003. EPA appears to have been silenced once the REA became politicized and ultimately it was a cooperating agency on the REA and did not object to it.

In early 2003, Governor Douglas requested, and the State Assembly approved, over $11 Million for fiscal year 2004 to begin construction on segments A and B of the CCCH. Overall, the Governor’s budget projected that completing this section would cost $44.8 Million between the years 2004 and 2007. FHWA issued a Record of

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260 Letter from Senator Patrick Leahy and Senator James Jeffords to the Honorable Christine T. Whitman, Administrator Environmental Protection Agency and the Honorable Mary E. Peters, Administrator Federal Highway Administration (October 1, 2002).

261 See ED AND NRDC, supra, at 10-11.

262 EXPLANATORY FOOTNOTE.


265 Id. The break down of funding is typical for a project like this. For the approximately $11 million that was originally budgeted for fiscal year 2004, most of it – $8.8 million – is federal money. Id. The rest – about $2.2 million – was to be bonded by the state of Vermont. Id. Of the $44.8 million originally budgeted to complete the Williston portion (Sections A and B), the federal/state share breaks down this
Decision approving the project on August 22, 2003. Environmental groups and concerned citizens who had commented on the project filed suit on October 15, 2003 to force a Supplemental EIS. That suit succeeded, as is discussed in the following section.

way: $35.9 million from federal funds and $8.9 million from state funds. *Id.* Note that these numbers vary slightly from the numbers in the CCMPO’s TIP. *See* note 198, *supra.*

266 Complaint of Plaintiffs Wayne Senville; Donald Horenstein; Vermont Public Interest Research Group, Inc.; Friends of the Earth, Inc.; Sierra Club, Inc.; and Conservation Law Foundation v. Mary E. Peters in her official capacity as Administrator of the Federal Highway Administration, and Patricia A. McDonald in her official capacity as Secretary of the Vermont Agency of Transportation, Civ. No. 2:03-cv-279 (filed October 15, 2003).

267 *See* Senville, *supra.* Certain Vermont politicians expressed sentiments that it was President Bush’s “fast-tracking” of the project that in large part led to the inadequate review and Judge Session’s ruling ordering further study. *See* Matt Sutkoski, “Circ Highway Comes to Screeching Halt, is Delayed 2 Years,” BURLINGTON FREE PRESS (____________, 2003).
PART IV: NEPA REVIEW OF THE CCCH: LEGAL AND POLICY SHORTCOMINGS

NEPA was signed into law in 1970 to ensure that a thorough review of the environmental impacts of major federal actions, including federally funded projects, takes place. NEPA directs federal agencies to:

[I]nclude in every recommendation or report proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on – (i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Thus, NEPA sets up a process requiring environmental assessment and study of an agency’s actions, but it does not dictate a particular outcome. While agencies must give the environmental impacts of a project a “hard look,” NEPA “merely prohibits uniformed – rather than unwise – agency action.”

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268 See 42 U.S.C.A. § 4321 et seq.

269 Id. § 4332(C).

270 Id.


272 Id. at 351. The Court stated in Robertson that, “Although [NEPA’s required] procedures are almost certain to affect the agency’s substantive decision, it is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process.” Id. at 350.
If an assessment performed by a federal agency shows that a project will have significant environmental impacts, \(^{273}\) Council of Environmental Quality (CEQ) (which oversees the NEPA regulatory requirements) regulations direct agencies to prepare a draft EIS, to be circulated for review and public comment, and a final EIS that responds to those comments. \(^{274}\) CEQ regulations mandate that a final EIS be supplemented if the agency makes substantial changes to the proposed action or if there are significant new circumstances or information concerning the environmental impacts of the proposed action. \(^{275}\)

Also, under separate FHWA regulations, if a project does not commence within three years of the final EIS, FHWA must perform a reevaluation study to determine if there are new impacts or changes that need further study. \(^{276}\) In such circumstances, FHWA regulations require that the reevaluation assess whether the project presents

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\(^{273}\) If a project does not have significant impacts, agencies are still required to document this in a short document known as a Finding of No Significant Impacts, or FONSI. 40 C.F.R. § 1508.13; 23 C.F.R. § 771.121.

\(^{274}\) 40 C.F.R. § 1502.9(a) and (b).

\(^{275}\) 40 C.F.R. § 1502(c); Senville, supra, at 9. NEPA imposes an on-going obligation to issue an SEIS if “[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed actions or its impacts,” 40 C.F.R. § 1502.9(c). As the Supreme Court explained in Marsh v. Oregon Natural Resources Council (ONRC):

> [T]he decision whether to prepare a supplement EIS is similar to the decision whether to prepare an EIS in the first instance: If there remains “major Federal action[n]” to occur, and if the new information is sufficient to show that the remaining action will “affect[t] the quality of the human environment” in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared.


\(^{276}\) 23 C.F.R. § 771.129(b).
changes, new information or new circumstances requiring a supplemental EIS (SEIS).

Further, where FHWA is uncertain of the environment impacts of a project it must evaluate, it may require an Environmental Assessment (EA) to assess the changes, new information or new circumstances regarding a project. An EA must include brief discussions of the need for the proposed action, alternatives to the proposed action, the environmental impacts of the proposed action, and a list of agencies and persons consulted.

Judicial review of federal agency actions under NEPA is governed by the Administrative Procedure Act (APA). The APA allows a court to hold unlawful and set aside an agency action under NEPA if the action is arbitrary and capricious, an abuse of discretion, otherwise not accordance with the law, or without observation of procedure required by the law. Therefore, for a court to find that NEPA was not complied with, a court generally must find that the agency relied on factors which Congress has not intended it to consider, entirely failed to consider an important part of the problem, offered an explanation for its decision that runs counter to the evidence.

277 23 C.F.R. §§ 771.129 -771.130. Under FHWA regulations, supplementation of an EIS is required whenever FHWA determines that “(1) [c]hanges to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or (2) [n]ew information or circumstances relevant to environmental concerns and bearings on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS.” Id. § 771.130(a).

278 Id. § 771.130(c); Senville, supra, at 9. An EA is public document that provides sufficient evidence and analysis to determine whether the agency needs to prepare an EIS (or SEIS), or whether it can issue a FONSI. 40 C.F.R. § 1508.9

279 40 C.F.R § 1508.9; Senville, supra, at 10.

280 Marsh v. ONRC, 490 U.S. at 375; Senville, supra, at 12, citing, Sierra Club v. U.S. Army Corps of Engineers, 772 F.2d 1043, 1050 (2nd Cir. 1985).

281 This requires that the agency base its decision upon relevant factors and not make a “clear error of judgment.” Senville, supra, at 13, citing, Marsh v. ONRC, 490 U.S. at 378.

before the agency, or offered an explanation for its decision that is so implausible that it
cannot be ascribed to a difference in view or the product of agency expertise.  

NEPA demands the type of comprehensive analysis of a project’s environmental
impacts that, if performed well, can often aid in producing decisions that achieve social
objectives in a cost effective and environmentally sound manner. While NEPA has
certainly been beneficial in forcing agencies to consider the consequences of potentially
destructive projects and has led to the abandonment of several environmentally harmful
projects such as the Everglades Airport and the Overton Park Greenway, it has flaws.
Given NEPA’s procedural nature and a standard of judicial review that is largely
deferential to the agency, an agency can perform a legally sound NEPA review that still
results in a poor decision. For instance, while an agency cannot “entirely fail to
consider” an important part of the project, it is not necessarily unlawful if an agency does
not give the most searching consideration to a matter. Also, NEPA does not require
reviewing agencies to use the best available scientific methodology NEPA gives
agencies a fair amount of discretion in scoping the alternatives to be examined, and
agencies need not consider a “worst-case-scenario” under NEPA.

283 Senville, supra, at 12-13, citing Natural Resources Defense Council, Inc. v. Muszynski, 268 F.3d 91, 97
(2nd Cir. 2001).

284 See e.g. Senville, supra, at 12-13 (agency action is lawful so long as the agency considered relevant
information and did not make a clear error of judgment).

285 Laguna Greenbelt v. U.S. Department of Transportation, 42 F.3d 517, 526 (9th Cir. 1994); Sierra Club, Illinois Chapter v. U.S. Department of Transportation, 962 F.Supp. 1037, 1043 (N.D.Ill. 1997), citing,
Sierra Club v. Marita, 46 F.3d 606, 623 (7th Cir. 1995).

286 Laguna Greenbelt, supra, at 524 (“The range of alternatives that must be considered in the EIS need not
extend beyond those reasonably related to the purposes of the project”); Friends of Southeast’s Future v. Morrison, 153 F.3d 1059, 1066-1067 (9th Cir. 1998) (agencies are afforded considerable discretion in
defining the purpose and need of a project and a purpose and need only need be “reasonable.” Moreover,
the Court ruled that, “The agency must look at every reasonable alternative within the range dictated by the
nature and scope of the proposal.”)(emphasis supplied).

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A. The REA: An Overview.

As discussed above, FHWA simply cannot rely on an old FEIS to go forward with a project; it must at least do a reevaluation study to determine if a SEIS is needed.288 One of the guiding factors in determining if an SEIS should be prepared is whether or not there exist significant new impacts from the project that were not originally considered.289 To determine if an action’s impact is significant, CEQ regulations require a federal agency to evaluate the “context” and “intensity” of an action.290 As can be inferred from the term, “context” requires the federal agency to look at the action in relation to the affected society, region, interests and locality.291 “Intensity” addresses the severity of the action and requires the federal agency to consider a variety of factors such as “[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts…” and “[w]hether the action threatens a violation of Federal, State, or local law…” such as the Clean Water Act or Clean Air Act.292

Given the age of the 1986 FEIS and the changes that have occurred in Chittenden County, a reevaluation of the FEIS was required.293 For the CCCH, this study took the form of the EA and REA, where FHWA and Vtrans concluded that there were not any

287 Robertson, 490 U.S. at 354.

288 See note 276, supra.

289 40 C.F.R. § 1502.9(c); 23 C.F.R. § 771.130(a); Senville, supra, at 9.

290 See Senville, supra, at 12, citing, 40 C.F.R. § 1508.27.

291 See 40 C.F.R § 1508.27(a).

292 Id. § 1508.27(b).

293 23 C.F.R. § 771.129(b).
new environmental impacts from the highway that need to be considered and that an 18 year old study suffices as a current review of the impacts of and alternatives to the CCCH. In many ways, the conclusions reached by these studies seem incredible. As detailed above, Chittenden County is a rapidly suburbanizing area and the environmental impacts over time of this suburbanization are many.

Soon after FHWA and Vtrans issued the Record of Decision approving the highway on August 22, 2003, the REA and FEIS were challenged in court by a group of concerned citizens and environmental groups. While upholding many aspects of the REA and FEIS, Judge William Sessions of the Federal District Court for the District of Vermont found that the REA and FEIS were illegal due largely to a failure to look at alternatives and an inadequate examination of the CCCH’s growth impacts.

B. FHWA’s Purpose and Need: A Narrow Justification Limiting Alternatives.

NEPA regulations require that there be a stated “Purpose and Need” for a proposed action. Regulations provide that a “Purpose and Need” statement “briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” However, the agency is given considerable latitude in determining what the purpose and need of the action is.

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294 See VTRANS AND FHWA, 2002 EA; VTRANS AND FHWA, REA.

295 See note 266, supra.

296 See Senville, supra.


298 Id.

299 See note 286, supra.
the alternatives to be considered relate to the purpose and need cited by the agency, this
gives the agency substantial power over the scope of alternatives that need be
examined.300

For the CCCH, the “purpose and need” presented an excellent opportunity for
FHWA and Vtrans to ask how Vermont could best invest in a transportation solution that
would be most effective in addressing congestion, had the lowest cost, and comported
with Vermont’s growth goals and aims of exemplary environmental stewardship.
Instead, FHWA and Vtrans chose a purpose and need that narrowly focused on the
question of whether the CCCH could reduce congestion at select intersections and road
segments. By using such a narrow purpose and need, FHWA and Vtrans have
shortchanged the NEPA study by limiting the range of alternatives so as to likely exclude
solutions that would be a better investment than the CCCH from a cost, efficacy and
environmental perspective, both immediately and over time.

The REA looks to the 1986 FEIS to define the “purpose and need” of the CCCH.
The REA states that:

The need for the project, identified in the 1986 CCCH
FEIS, is to reduce existing and future traffic congestion, to
assist local roads to function within their design and
operational capabilities, and to improve safety and traffic
efficiency in the project area. This project is supported by
the 2002 Traffic Report. The purpose and need for the
project, as identified in the 1986 FEIS, remains valid in
2002 and supports the continued development of the
project.301

300 See e.g. Laguna Greenbelt, supra, at 524 (“The range of alternatives that must be considered in the EIS
need not extend beyond those reasonably related to the purposes of the project.”).

301 [VTRANS AND FHWA, REA, at AR 30002611].
In sum, the purpose and need for the CCCH, as identified by the FEIS and REA, seeks:
(1) to reduce existing and future traffic congestion; (2) to assist local roads to function within their design and operational capacities, largely by providing an arterial road to take traffic off these local roads; and (3) to improve safety and traffic efficiency in the project area.\textsuperscript{302}

While the REA concludes that the CCCH will meet the purpose and need, the REA’s own data show that the CCCH will only marginally make localized traffic work more efficiently.\textsuperscript{303} The REA forecasts that while some intersections and road segments will receive slight to moderate improvement as a result of the CCCH, others will see no improvement or will be worsened because of the CCCH.\textsuperscript{304} This indicates that, as is

\textsuperscript{302} Id.

\textsuperscript{303} See Senville, supra, at 37 (stating that the construction of segments A and B of the CCCH will only save commuters seven seconds of travel time during evening rush hour). EPA, in its initial comments, also questioned whether the project met the purpose and need, stating that, “The predicted improvements in performance of the transportation system if the highway is built appear to be modest.” Varney Letter at TA-1. EPA also questioned whether the models used properly accounted for induced travel. Id.

Moreover, even though a court found FHWA’s and Vtrans’s methods acceptable, the analysis they performed had some arguable flaws. For instance, the REA does not analyze the phenomenon of induced travel. [See Comments of Michael Oman to the 2002 EA, Transportation and Planning Consultant, Transportation Planning Director, CCMPO, 1992-1997, at 2-3 [hereinafter Oman Comments]]. Induced travel is the well documented phenomenon where traffic growth occurs when capacity is expanded largely because drivers take advantage of the increased capacity rather than seeking other modes of transportation. See e.g. EPA, OBNE, at 22-24. FHWA and Vtrans contend that induced travel – while not directly accounted for in the traffic model used – will be small and is thus largely accounted for in the travel demand projections and induced growth analysis. [VTRANS AND FHWA, REA, Response to Oman Comments, Appendix G, at Oman 3.8, AR ___________.] Yet, by not taking this phenomenon into account, the slim benefits of the CCCH detailed in the REA may be potentially exaggerated.

\textsuperscript{304} For instance, the following segments will see traffic increases from construction of the CCCH:

- Route 2A from Pinecrest to CCCH in Essex: a 2-4% increase with partial construction and a 3-10% increase with full construction.
- Route 15 from Allen Martin Drive to Jericho in Essex: a 5% increase with partial construction and a 20-24% increase with full construction.
- Route 117 from CCCH to Sand Hill Road in Essex: a 16-26% increase with partial construction.
typical of highway construction, the CCCH will merely shift traffic patterns in the region from some roads to others. The REA also reveals that certain segments of the CCCH itself will operate at a level of service (LOS) of E, a heavily congested LOS.\textsuperscript{305} The REA’s analysis additionally shows that a substantial increase in traffic on the area’s interstate system will result from the construction of the CCCH, as traffic is funneled from local roads onto I-89 and I-189.\textsuperscript{306}

In terms of increasing efficiency, the REA cites some seemingly impressive numbers. For instance, the REA projects a total savings in travel time region wide in the year 2023 of 17,636 minutes for construction of Segments A and B and 53,572 minutes for full construction.\textsuperscript{307} While these numbers sound significant, when they are boiled down to per trip savings, they appear paltry – a total per trip savings of about 34 seconds

\begin{itemize}
\item Mountain View Road from Route 2A to Redmond Road: a 4-17\% increase with partial construction and a 5-17\% increase with full construction.
\item Sand Hill Road from Route 117 to Allen Martin Connector: a 8-10\% increase with partial construction.
\item Sand Hill Road from Allen Martin Connector to Route 15: a 9-12\% increase with partial construction and a 51-61\% increase with full construction.
\end{itemize}

\textsuperscript{305} [VTRANS AND FHWA, REA, 2002 Traffic Study, Table 12, at AR 30004237; see also, Oman Comments, at 10] (noting the failing level of service).

\textsuperscript{306} The CCCH is projected to substantially increase traffic on the area’s existing interstate system (I-89 and I-189) in exchange for a reduction in congestion on certain local roads. Whether either a full build or a partial build (segments A and B in Williston, plus the existing segments C-F in Essex) is constructed, congestion on the interstates is projected to increase by 14-15\% in 2023 compared with not building the CCCH. [VTRANS AND FHWA, REA, 2002 Traffic Study, at AR 30004250]. An additional concern regarding this increase in congestion on the interstate system is that it may require widening of the current interstate, consuming more transportation dollars that might go towards investments in transit or other transportation alternatives. There is already discussion at the CCMPO regarding widening I-89 from four to six lanes between Williston and Winooski. See CCMPO, News Release, “New Transportation Options to be Considered” (October 6, 2003).

\textsuperscript{307} [VTRANS AND FHWA, REA, 2002 Traffic Study, at AR 30004252].
for full construction.\footnote{See id.; Oman Comments at 10 and 11.} If only partial construction (Segments A and B in Williston plus the already built sections) occurs, the per trip savings will be about 11 seconds.\footnote{See id.}

These slim benefits become all the more troubling when weighed against the costs of the highway, which are staggering for Vermont in dollar amounts and potential environmental consequences. Since Judge Sessions did not find the purpose and need illegal, FHWA and Vtrans are not obligated to change it in the supplemental study scheduled to occur over the coming year. Without changing the purpose and need of the study to look more broadly at regional growth and transportation concerns, a supplemental EIS may again fail to scope an alternatives analysis that allows Vermonters to feel certain that the state is making a sound investment.

C. \textit{False Accounting: Segmenting the Highway to Justify Its Need.}

Another troubling aspect of the REA is that it often uses convenient accounting when talking about the benefits and costs of the highway by counting the benefits of a fully built, four lane highway, and only discussing the costs of Segments A and B. Additionally, FHWA and Vtrans look at the partial completion of the highway as a justification for further completion of the highway, causing a segment by segment analysis of the highway’s need that stifles a broader look at alternatives. For instance, with Segments C-F completed, the REA uses this completed section of the CCCH to demonstrate that construction of Segments A and B is needed to cope with traffic

\footnote{See id.; Oman Comments at 10 and 11.}
problems created by the already built Essex Section (C-F). The REA then reveals that construction of A and B will actually increase VMT over the no-build alternative and that congestion relief can only be realized by full completion of the CCCH. Given the logic presented in the REA, the purpose and need for the highway becomes to make a partially built highway function better, and a partially constructed highway can only function better by its completion. Thus, the segmentation used by FHWA and Vtrans creates a self-fulfilling prophesy that excludes alternatives other than completing the road.

This is likely illegal despite Judge Session’s ruling to contrary. Segmentation is prohibited under Department of Transportation (DOT) regulations unless certain criteria apply, mainly concerning whether the segmented portion of the project has independent utility (will function as a stand alone project) and allows for a proper analysis of environmental matters and alternatives. Judge Sessions found that

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310 [VTRANS AND FHWA, REA, 2002 Traffic Study, at AR 30004245] (citing improvements to traffic conditions at Route 289 (the CCCH) Exits as justifications for building Segments A and B).

311 The REA shows that construction of Segments A and B alone will increase congested VMT in Chittenden County by 2.4% over the no-build scenario. [VTRANS AND FHWA, REA, at AR 30002660]. According to the FHWA model, the entire, four-lane, end-to-end highway is needed to reduce congested VMT by 2.2% over no-build. [See id.].

312 Courts have noted that segmentation that leads to a commitment of action can impermissibly restrict alternatives. An action impermissibly restricts a consideration of reasonable alternatives if the action, “[E]ffectively commits decisionmakers to a future course of action…. Such a commitment might occur [if] … a project might appear to be an unreasonable expenditure of funds unless some related project were also completed [or] completion of the first project may cause the benefit/cost ratio on the second to rise sharply.” Coalition On Sensible Transportation, Inc. v. Dole, 826 F.2d 60, 69-70 (D.C. Cir. 1987) (the Court, however, ruled that the project at issue would not lead to such a commitment).

313 DOT regulations prohibits the segmentation of highway projects unless the segment will: (1) connect logical termini and be of sufficient length to address environmental matters on a broad scope; (2) have independent utility or independent significance (be a usable and reasonable expenditure even if no other additional transportation improvements in the area are made); and (3) not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. 23 C.F.R. § 771.111(f); Senville, supra, at 33; see also Patterson v. Exxon, 415 F.Supp. 1276, 1282 (D.Neb. 1976) (“Planning and building highways in a piecemeal fashion threatens to frustrate [the analysis of alternatives required by
FHWA’s conclusion that Segments A and B have independent utility was not faulty given NEPA’s deferential standard of review and the small savings in travel time the REA showed these segments would provide, but he questioned the worth of investing in just Segments A-B. However, it appears extremely difficult to justify Segments A and B as an action independent of the entire highway.

D. Evaluation of Growth and Land Use Impacts.

CEQ regulations governing NEPA review require federal agencies, like FHWA, to consider both the cumulative effects (the impacts of the project when added to other past, present and reasonably foreseeable actions) and indirect effects (reasonably foreseeable impacts caused by the action that are removed in time and distance) of their actions. This analysis requires a look at a project’s growth impacts, both those caused or induced by the action and those added with other actions affecting growth.

NEPA] by allowing a gradual, day-to-day growth without providing an adequate opportunity to assess the overall, long-term environmental effects of that growth.”

Senville, supra, at 37.

Id. Judge Sessions stated that, “Whether achieving a savings of seven seconds in commuter time [during evening rush hour] is a wise expenditure of resources is not a judgment that this Court is permitted to make.” Id.

40 C.F.R.§§ 1508.7, 1508.8(b), 1502.16 and 1508.25(c). Indirect effects are defined as those:

[C]aused by the action and … later in time or farther removed in distance, but … still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Id. § 1508.8(b). Cumulative impacts must be considered under 40 C.F.R. § 1508.25(c). Cumulative impacts are those that result from the incremental impacts of an action “when added to other past, present, and reasonably foreseeable future actions.” Id. § 1508.7; Senville, supra, at 63. A meaningful cumulative impacts analysis must, “identify (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions – past, present, and
The REA’s analysis of growth impacts concluded that the CCCH’s effect on growth within the County will be to “focus and give direction to the growth trend already established.”\textsuperscript{318} Echoing the 1986 FEIS, the REA concluded that the CCCH will not result in any new growth for the County, or additional growth beyond what is predicted to occur if the highway is not built.\textsuperscript{319} Instead, the REA finds that the CCCH will merely redirect growth away from Burlington, South Burlington, Winooski and areas south of Burlington to Essex and towns in the northern part of the County.\textsuperscript{320}

Judge Sessions found the REA’s growth impacts’ analysis to be inadequate and illegal.\textsuperscript{321} Judge Sessions first concluded that the 1986 FEIS:

\begin{quote}
[I]ncluded no discussion whatsoever of cumulative impacts. It contained a sketchy acknowledgment of indirect impacts with regard to agricultural lands with no analysis. These deficiencies cause the 1986 FEIS to fail to meet the standards for an adequate EIS for purposes of adoption by FHWA.\textsuperscript{322}
\end{quote}

\textsuperscript{317} \textit{Senville, supra}, at 62; 40 C.F.R. § 1508.5(b).

\textsuperscript{318} \textit{Senville, supra}, at 64,\textit{quoting from the Administrative Record.} EPA, in its comments originally critical of the EA, implied that these important questions were given inadequate attention by FHWA and Vtrans. In discussing the need for a better examination of alternatives, EPA stated that, “This comparison [of the CCCH to alternatives such as TSM, TDM and transit] is worthwhile given that the MPO’s last transportation plan (A Twenty-Year Vision for Transportation in Chittenden County, published in 1997) concluded that on a regional scale, the single most effective approach to addressing transportation issues is the implementation of a ‘Growth Center’-based development pattern.” Varney Letter at TA-1 and TA-2.

\textsuperscript{319} \textit{Senville, supra}, at 64. The Record of Decision concluded that, “[I]t is expected that the extent of growth in Chittenden County will change less than 1% due to construction of the CCCH.” \textit{Id. (citing the Record of Decision).}

\textsuperscript{320} \textit{See id.} at 64-66 (discussing the REA’s growth analysis).

\textsuperscript{321} \textit{Senville, supra}, at 62-72.

\textsuperscript{322} \textit{Id.} at 63. Judge Sessions further writes that the FEIS “generally … agreed that the project would have indirect secondary impacts on agricultural lands in the project area.” \textit{Id.} at 22. But that, “The FEIS did not support its assumption with any analysis, nor were mitigation measures discussed. VTrans indicated that it
The Court went on to attack the growth impact analysis of the REA. Judge Sessions looked at two components to define induced growth: (1) growth that would not have occurred in the region without construction of the highway, and (2) relocated or redirected growth that is directed to a specific area due to changes in accessibility. While the Court ruled that the FHWA had relied on adequate studies to support its conclusion of no new growth from the CCCH, the Court determined that the REA failed to adequately account for the effects of redistributed growth.

Primarily, Judge Sessions found that “FHWA did not consider factors such as the detrimental social and economic impact of draining jobs and population from the region’s cities: Burlington, South Burlington, Essex Junction and Winooski.” The Court also intended to complete a study ‘to determine the indirect impacts on agricultural lands that would result from construction of the highway.’ The FHWA protested at the time that such a study should have been done as part of the EIS process, and that if there were agricultural impacts that had not been studied for the EIS, then the FEIS should be withdrawn, and a proper agricultural land impact study competed and incorporated into a revised FEIS. The 1986 FEIS failed to address cumulative impacts and secondary impacts on agricultural resources.”

323 Id. at 63.

324 Id. at 66-67. In discussing Plaintiff’s objections to the methodology used by FHWA, the Court stated that:

While the Plaintiffs’ objection may prove to be well-taken, a dispute over the inputs to a computer model is the kind of technical determination that requires deference to the agency from the Court, which is constrained to determine whether or not FHWA made a “reasoned decision,” even if its conclusion is debatable. Given the wealth of opinion that supports the assumption of no significant increase in overall regional growth from construction of a circumferential highway, and the outcome of the CCMPO modeling, the Court cannot say that FHWA’s conclusion was not a reasoned decision.

Id. at 66-67 (citations omitted).

325 Id. at 68-69.

326 Id. at 68. Judge Sessions further wrote that, “In response to comments pointing out this omission, FHWA noted that growth rates in the urban cities have been declining for thirty years and are predicted to
ruled that the REA failed to consider new information not considered in the 1986 FEIS that towns in Chittenden County not adjacent to the CCCH, particularly towns in the northern part of the County, would potentially be affected by its construction. Judge Sessions stressed that by responding to this information with a mere conclusion “that towns in the area will experience increased development pressure” without analyzing the implications of this pressure, the REA’s analysis did not satisfy NEPA. Finally, the Court found that, like the FEIS, the REA failed to examine cumulative impacts.

continue. The Court cannot conclude that this constitutes a ‘hard look’ at the effects of relocated growth in the region.” Id. at 68-69 (citations omitted).

327 Id. at 69.

328 Id. Judge Sessions, in discussing impacts on outlying towns, stated that:

The FREA’s induced growth study summarizes that while the Adjacent Towns [Hinesburg, Jericho, Milton, Richmond, St. George, Shelburne, Underhill and Westford] and Outer Towns [Bolton, Buels Gore, Charlotte and Huntington] will experience small increases in accessibility, their growth potential is affected by the CCCH: “[h]owever, planning and zoning within some of these towns is less developed, and growth pressures within some of these towns may result in uneven growth pressures.” The recognition that the CCCH would result in relocated growth pressure on outlying towns was “new information” that had not previously been evaluated in the 1986 FEIS. … The cursory treatment of relocated growth pressures on the outlying towns in Chittenden County is inconsistent with a hard look at induced growth, particularly when the issue was not part of the original EIS.

Id. at 69-70 (citations omitted).

329 Id. at 70. Judge Sessions explains that, “[R]eview of the record does not reveal that Defendants took a ‘hard look’ at cumulative impacts. Other than the bald assertion in the introduction to the induced growth study that ‘induced growth, as utilized in this study, includes both secondary and cumulative impacts’ the Court has been unable to find any discussion of cumulative impacts in the study or the FREA overall.” Id. (citations omitted).

The Court also ruled that the FREA did not account for the EIS’s inadequate treatment of secondary impacts on agricultural lands by including in it a study of such effects conducted after the 1986 FEIS. Id. at 70. The Court was primarily concerned with the fact that the study, the Humstone Squires report prepared for the Vermont Land Trust in 1987, was not circulated for public comment and therefore “does not satisfy NEPA’s EIS requirements” and that “the fact the study was eventually included in the an appendix to the FREA” does not satisfy NEPA because “[a]n EA is no substitute for an EIS.” Id. The Court ultimately concluded that, “No meaningful assessment of secondary agricultural impacts has been publicly circulated and available for public comment, as far as the record shows.” Id.
The REA’s own statistics regarding the “redirected growth” that will be caused by the CCCH paint a picture of further loss of overall future jobs and other growth in existing growth centers like Burlington.\textsuperscript{330} For example, the REA finds that as a result of the CCCH’s construction, Burlington will lose 311 future jobs over the next 20 years.\textsuperscript{331} Likewise, Burlington is projected to lose 148 future households over the next 20 years as a result of the CCCH.\textsuperscript{332} On the other hand, Essex Town is projected to gain 1106 new jobs over the next twenty years as a result of the CCCH.\textsuperscript{333} Moreover, consistent with its claim that the CCCH will not create new growth, the REA finds that this shift in job growth will occur without creating an increase in future jobs for the County over not building the CCCH.\textsuperscript{334} Therefore, the REA finds that the CCCH will not create jobs but merely move future jobs from core areas to suburban and outlying areas in the northern part of County.\textsuperscript{335}

\textsuperscript{330} [VTRANS AND FHWA, REA, at AR 30003798].

\textsuperscript{331} \textit{Id.} In addition to the loses in Burlington, South Burlington is projected to lose 545 future jobs over the next twenty years, and Winooski is projected to lose 10 future jobs over the next twenty years if the CCCH is constructed. \textit{Id.} These numbers are taken by subtracting the number of jobs these towns are predicted to have if the CCCH is built from the number of jobs these towns are predicted to have if the CCCH is not built.

\textsuperscript{332} \textit{Id.}

\textsuperscript{333} \textit{Id.}

\textsuperscript{334} \textit{Id.}

\textsuperscript{335} \textit{See id.} EPA was originally extremely critically of the failure to analyze the negative impacts to downtown areas in its comments to the EA. EPA stated that:

[I]f after the study is found to be accurate that the highway will have no impact on the extent of growth but will simply redirect and focus it, then FHWA/VTrans must disclose the negative impacts of the new development on the inner core communities that are losing population, and on existing commercial centers. The EA/Reevaluation only analyzes half the story; it does not address the negative environmental, economic, and social impacts of potentially drawing population and jobs out of the cities in Chittenden County.
While Judge Sessions accepted the legality of the REA’s no new growth conclusion on the grounds that use of technical models such as those relied on by FHWA and Vtrans require deference from the Court, the “no new growth” conclusion belies an enormous justification for the highway. Both the FEIS and the CCCH’s proponents have touted the highway as an economic talisman essential to spurring economic growth and job creation. In fact, Governor Douglas has publicly declared that building the

Varney Letter at TA-4.

EPA went on to challenge the project’s conformance with Vermont growth laws:

[W]e question whether the project conforms with Vermont’s exemplary laws and regulations that discourage sprawl. … This project should be thoroughly analyzed to ensure that it does not undermine Vermont’s land use efforts by inducing sprawl. Growth does not have to equal sprawl. Given the state’s strong leadership in smart growth, and given the expense of this highway project, the public deserves a full assessment of its costs as well as benefits.

Id. at TA-5.

336 Senville, supra, at 66-67.

337 The Original FEIS clearly emphasized that the CCCH was needed to alleviate conditions that would restrict growth. The FEIS stated that, “The restricted capacity of the existing transportation network would limit opportunities for continued development within the growth area around Burlington.” [VTRANS, 1986 FEIS, at AR 20005005]. As to other towns in the region, the FEIS went on to echo this sentiment, stating that:

In Colchester, the No Action alternative would limit opportunities for continued development…. For the town of Essex and the Village of Essex Junction, the No Action alternative would limit future economic development opportunities. Deteriorating levels of service on the existing roadway network would adversely affect both the businesses and the residents of these communities and would inhibit future economic development.

[Id. at AR 20005006.] Additionally, when the CCCH was nominated for “accelerated environmental review” under Executive Order 13274, Vermont FHWA Division Administrator Charles Basner stated that, “The purpose of the CCCH is to provide for economic development.” [AR at 30004087]. In a ceremonial groundbreaking event for Segments A-B of the CCCH, current Vermont Governor Jim Douglas declared the highway important to creating jobs in the region. Press Release, “Governor Douglas Breaks Ground on the Circ. Highway: Ceremony Represents Commitment to Job Creation,” (December 17, 2003).
highway is part of an “aggressive job creation strategy” for his administration.\textsuperscript{338}

Contrary to the Governor’s intent, instead of aggressively creating jobs, the CCCH will cost taxpayers at least $223 million for a sprawl inducing project that will create no jobs, have virtually no overall economic benefits and will have clear detriments to existing growth areas.\textsuperscript{339}

E. Air and Water Quality Impacts.


\textsuperscript{339} It is also worth noting the potential, though arguably not severe, environmental justice impacts the highway may have. As discussed previously in this thesis, job growth in Chittenden County is trending towards suburban areas. Suburban areas are, for the most part, a substantial distance from impoverished areas in the region, such as the Old North End in Burlington and areas in Winooski.\textsuperscript{339} The EPA describes environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental law, regulations, and policies. See US EPA Environmental Justice Website available at (http://www.epa.gov/compliance/environmentaljustice/) site last visited March 12, 2004. Pursuant to Executive Order No. 12898 (59 Fed. Reg. 7,629-33 (Feb 11, 1994)), which requires that agencies, to the greatest extent practicable and permitted by law, make achieving environmental justice part of their mission by identifying and addressing disproportionate effects of agency actions on minority and low income communities, FHWA published its own order giving parameters defining the scope of review to evaluate an “adverse effect” pertaining to environmental justice concerns. FHWA Order 6640.23, December 2, 1998. The Executive Order asks that the agency consider, among other things, social and economic effects, including deleterious effects on a community’s economic vitality, public services, and adverse employment effects. Id.

Plaintiffs contended that the REA contained little evaluation of the effects of the CCCH on low-income populations, particularly Burlington’s Old North End. See Plaintiffs’ Motion for Partial Summary Judgment and Supporting Memorandum of Law, Senville v. Peters, Civ. No. 2:03-cv-279, 73-78 (February 5, 2003) [hereinafter Plaintiffs’ MSJ]. FHWA and Vtrans concluded that the shift in job growth caused by CCCH will not have a significant effect on these low-income areas and makes a rather cursory conclusion that another highway would provide more road capacity for bus service for the Old North End. See Senville, supra, at 56; [VTRANS AND FHWA, REA, at AR 30002717-2120]. Yet, the REA completely fails to discuss possible increased transportation costs for this community if job growth trends towards more remote locations. See [VTRANS AND FHWA, REA, at AR 30002717-2120]. While Judge Sessions found that this alleged deficiency does not violate NEPA, see Senville, supra, at 56 (Judge Session reasoned that since the shift in job growth away from poorer areas was relatively minor in percentage terms (for instance, a 0.63% reduction for Burlington), it was not unreasonable for FHWA and Vtrans to conclude that there was no adverse impact on these poorer communities), the terse look at the effects on lower income areas from the CCCH again arguably presents a failure to searchingly address a further potentially negative effect of the highway on existing downtown areas.
NEPA requires that FHWA consider the air and water quality impacts of the highway. As detailed earlier, since the 1986 FEIS was performed, the region has come close to violating air quality standards for pollutants such as ozone and fine particulate matter and several water bodies in the affected area have become “impaired,” no longer meeting water quality standards.

The REA concludes that the CCCH will not have an adverse impact on the region’s air and water resources. The REA also concludes that there has been no significant change since 1986 that would warrant a SEIS to evaluate the highway’s effect on air and water resources in the area.

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340 40 C.F.R. § 1508.27(b)(10) (requiring an EIS to evaluate “[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.”).

341 For instance, according to the EPA, Vermont has exceeded the eight-hour average ozone standard at least eight times between 2000 and 2002. EPA, Region 1, New England Ozone Exceedances for 2000, 2001, 2002. Additionally, Vermont’s own monitoring indicates that the levels of hazardous air pollutants in Chittenden County have exceeded recommended health standards approved by EPA and the State of Vermont. TOXICOLOGY ADVISORY COMMITTEE, Air Toxics Report 24 (preparing for State of Vermont Agency of Natural Resources, February 1998). If Vermont were to become a non-attainment area, stricter Clean Air Act requirements would apply, making economic growth more difficult due to increased and more burdensome permitting requirements. See COMMITTEE TO ENSURE CLEAN AIR, Report to the Vermont General Assembly 5 (February 15, 2002) [hereinafter COMMITTEE TO ENSURE CLEAN AIR].

342 Allen Brook, Indian Brook, Sunderland Brook and Lake Champlain have become impaired since the 1986 FEIS. See STATE OF VERMONT, 2004 303(d) List, VERMONT AGENCY OF NATURAL RESOURCES’ DEPARTMENT OF ENVIRONMENTAL CONSERVATION AND THE NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION, Lake Champlain Total Maximum Daily Load (September 25, 2002) [ANR AND NY DEC, Lake Champlain TMDL]. Allen Brook has become impaired for stormwater and e. coli, which are often caused by runoff from suburban development, including roadways. STATE OF VERMONT, 2004 303(d) List. Indian Brook is impaired for stormwater, also attributed to runoff from land development. Id. Similarly, Sunderland Brook is impaired for stormwater, again from land development. Id. The Main Lake of Lake Champlain, which receives waters from all three of these brooks plus the Winooski River (which is not impaired), is impaired for phosphorous, which also comes from urban runoff. ANR AND NY DEC, Lake Champlain TMDL.

343 [VTRANS AND FHWA, REA, at AR 30002730-30002743].

344 See id.
The REA’s analysis revolves largely around a conclusion that because the highway has permits, the impacts on air and water quality will not be significant. Judge Sessions found that this analysis was not arbitrary and capricious. Yet, with the documented connection between highways, sprawl and resulting air and water pollution, it is difficult to imagine that this project and any resulting sprawl will not have negative impacts on the air and water resources of the region.

1. Impacts on Air Quality.

In its air quality analysis, the REA relies largely on a 1985 Air Quality Technical Report, which reviewed the results of a mesoscale analysis for three pollutants – non-methane hydrocarbon (HC), carbon monoxide (CO) and nitrogen oxide (NOx). The studies the REA relies on essentially conclude that while VMT will increase as a result of the CCCH, overall emissions of HC and CO will decrease because vehicles will be diverted from local roads to the interstate system where they will travel.

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345 [VTRANS AND FHWA, REA, at AR 30002730-2743, AR at 30004338-4358; VTRANS, 1986 FEIS, at AR 20004308-4830; see Senville, supra, at 41-53 (detailing the REA’s air and water impacts analysis).

346 See Senville, supra, at 41-53.

347 As background, under the Clean Air Act (CAA), the EPA has identified certain pollutants that endanger public health and welfare and promulgated National Ambient Air Quality Standards (NAAQS) setting forth maximum allowable concentrations in ambient air for these six pollutants: carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), particulates of ten micrometers and smaller in diameter (PM10), sulfur dioxide (SO2), and lead (Pb). 42 U.S.C.A. §§ 7408-09; 40 C.F.R. pt. 50; Senville, supra, at 41. EPA has not established NAAQS for mobile source air toxics or hazardous air toxics. See Senville, supra, at 41. Under the CAA, state implementation plans (SIP) are the primary means of attaining or maintaining NAAQS. 42 U.S.C.A. § 7410(a)(2); Senville, supra, at 41. Vermont has an approved SIP and is in attainment with NAAQS. Senville, supra, at 41.

349 A mesoscale analysis studies regional air quality. A microscale analysis studies air quality at certain points, like intersections. See Senville, supra, at 42. [DESCRIBE AIR QUALITY CONTROL REGION.]

349 Id. at 43; [VTRANS, 1986 FEIS, at AR 20004981.]
at higher and more efficient speeds. However, the studies founds that NOx emissions, which increase at higher speeds, would increase as a result of the CCCH’s construction. Microscale analyses conducted at several intersections of concern also showed that CO levels would not increase to a level of non-attainment.

As the court noted, air quality in Chittenden County has deteriorated since 1986. As a result, FHWA updated the 1985 information relied on by using a partially updated model from the CCMPO that looked at construction of Segments A-B plus the already built segments of the CCCH. The conclusion FHWA drew from this update was that a new mesoscale analysis was unnecessary. While the Court did not wholeheartedly endorse this approach, it found it “reasonable.”

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350 Senville, supra, at 43.
351 Id. at 43.
352 Id. at 43-44. [GLOSSARY]
353 Id. at 44. [GLOSSARY].
354 Id. This again goes back to the issue of segmentation and how FHWA uses a partially built CCCH to evaluate costs. Since it is likely that constructing Segments A and B will lead to the completion of the highway, not evaluating the entire highway’s impacts gives the public a misleading assessment of the air quality ramifications the project will have.
355 Id. at 45.
356 Id. at 46. The Court expressed skepticism over the approach chosen, but stated that:

Although the Court in unable to fathom why FHWA would undertake a partial, rather than a complete update of its air quality modeling, the Court’s task here is not to dictate the sort of hard look the agency must take, but to determine whether it was hard enough. Given the minor change in VMT estimates from the 1986 estimates, FHWA’s decision to look no further than the traffic analysis was based upon reason.

Id. The Court further found that FHWA’s and Vtrans’ reliance on the fact that the highway has received permits and is included the CCMPO’s TIP, which by law must conform to state air quality standards, was sufficient for the purposes of a NEPA analysis. Id. at 44-45.
Plaintiffs in *Senville* attacked this method as outdated and unreliable. Plaintiffs also argued that the REA failed to consider several pollutants of current concern to Chittenden County that are linked, at least in part, to vehicle travel. Plaintiffs are correct. The REA and FEIS failed to consider the highway’s effect on ozone levels, fine particulate matter, and HAP, which have been of recent concern in Chittenden County and are linked to automobile travel. EPA also initially criticized the failure to analyze these pollutants:

> Although Chittenden County is in attainment for ambient air quality standards, since vehicles are the source of pollutants including carbon monoxide, particulate matter, volatile organic compounds, oxides of nitrogen, and hazardous air toxics, an alternative that minimizes vehicle emissions is environmentally preferable.

However, the Court found that a look at these pollutants, however desirable, was not required because it found it had to accept FHWA’s conclusion that the completion of Segments A and B would not significantly alter overall VMT.

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357 *Id.* at 45. Plaintiffs argued that the 2002 traffic analysis done by FHWA and Vtrans did not account for: (1) changes in vehicle emissions, emissions standards and fuel efficiency; (2) increased highway speed; (3) upward adjustment in base emissions rates; and (4) decreases in air quality regionally. *Id.*; see Plaintiffs’ MSJ, at 43-57.

358 *Senville*, *supra*, at 46.

359 Governor Dean’s 2002 report to the General Assembly highlights the air quality problem in Chittenden County and its link to automobile use. The report states that, “Automobile traffic in Vermont is the major source of emissions of air contaminants.” COMMITTEE TO ENSURE CLEAN AIR, *supra*, at 22; see *Senville*, *supra* at 46 (“HAPs, ozone, and CO2 are all caused by congested VMT.”) While Judge Sessions accepted the adequacy of the FHWA’s analysis, other courts have been suspect of similar failures to consider such pollutants in the context of a highway project. *See Sierra Club, Illinois Chapter*, 962 F.Supp. at 1045 (“An impact statement is incomplete without an analysis of the effect of the [project] will have on the production of ozone in the region. …. defendants must either prepare a study that explicitly compares ozone production with and without the tollroad or explain why a study is not possible.”). The REA neither studies the impacts of ozone nor explains why such a study is not possible. *See VTRANS AND FHWA, REA, at AR 30002741-43.*

360 Varney Letter at TA-2.

361 The Court stated that:
Despite the Court’s finding, the REA’s analysis of air impacts is suspect because the Air Pollution Control permit does not address air toxics.\textsuperscript{362} This is especially significant given that motor vehicles are the greatest source of air toxics in Vermont.\textsuperscript{363} It is also suspect given the REA’s failure to look at induced traffic and the potential effects of increased congestion from future growth since the highway is expected to redirect growth to suburban areas where, unlike the urban core, car use is often the only viable transportation option for employees and residents. The study is further suspect as it completely ignores potential global warming impacts.\textsuperscript{364} Vermont has proposed strategies as part of a regional effort to combat global warming that stresses reducing VMT and transportation related emissions of GHG.\textsuperscript{365} The REA’s conclusion that VMT

\begin{footnotesize}

\textsuperscript{362} The permit, as amended, states its reliance on the 1985 Air Quality Technical Report. This Report did not consider hazardous air pollutants, nor is there any evidence that the permit considers HAPs. [See VTRANS, 1986 FEIS, at AR 20003764, 20009199 and 20009208-11]. The Vermont Air Pollution Control permit only requires conformity with HAPs for stationery sources. Vermont Air Pollution Control Regulations § 5-261(1)(a) and (5). However, since the highway is an indirect source, under the regulations, it does not have to comply with the requirements for HAPs. \textit{Id}. Relying on the permits may give a good indication as to how the highway will affect the level of the pollutants covered by the permit, but, it will say nothing about the highways affect on pollutants the not covered by the permit, such as HAPs.

\textsuperscript{363} Vermont Department of Environmental Conservation, Air Pollution Control Subdivision, Sources of Toxic Air Pollution available at (http://www.anr.state.vt.us/air/AirToxics.htm) site last visited December 10, 2004.

\textsuperscript{364} The Court found that is was reasonable for FHWA and Vtrans not to look at global warming gases given that “the 2002 traffic analysis concluded that the CCCH will not alter overall congested VMT by a significant amount over the next twenty years.” \textit{Senville, supra}, at 46.


\end{footnotesize}
will increase due to the construction of Segments A and B appears contrary to these strategies.

2. Impacts on Water Quality

As stated above, several water bodies, including Lake Champlain, that will be affected by both the construction and operation phases of the CCCH have become “impaired” since 1986. As brief background, the federal Clean Water Act requires that states set standards for the water quality of water bodies that are based, in part, on certain designated uses for the water body, such as fishing, swimming, and water supply. If a water body does not meet these standards due to pollution, the state must list such a water body as “impaired” for its designated uses and list the reason for impairment. For impaired waters the state must then set forth a clean-up plan for the water body that determines a pollution budget which allocates the amount of pollutants the water body can assimilate without becoming impaired. These pollution budgets are called total maximum daily loads, or TMDLs.

Plaintiffs in Senville alleged that both the construction and the operation of the CCCH will contribute significant amounts of pollutants, such as sediment, salt and phosphorous, to already impaired waters. Plaintiffs stressed that one of the most glaring omissions in the REA is a thorough analysis of the deteriorated state of these impaired waters and how the CCCH and possible induced growth will affect these

366 33 U.S.C.A § 1313.
367 Id. § 1313(d).
368 See id.
369 Plaintiffs’ MSJ, at 57-71.
However, Judge Sessions found that FHWA’s reliance on the existing permits and a study of sediment loading into impaired Allen Brook was adequate for the purposes of NEPA. The analysis that Judge Sessions approved of concluded that due to an offset program on Route 2, which also discharges sediment into Allen Brook, and certain treatment measures, no increase in sediment loading to Allen Brook would occur. Judge Sessions additionally found that FHWA’s reliance on permits to determine that phosphorous loading into Lake Champlain would comply with the TMDL for phosphorous for the Lake was adequate.

Yet, FHWA’s and Vtrans’ conclusions are built upon some troubling foundations. The REA provides no analysis of sediment loading into impaired Allen Brook during the four year construction phase, but rather relies on the permit issued for the construction phase, which expressly allows for violations of water quality standards to occur during this period. Additionally, mitigation measures for sediment loading into Allen Brook,

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370 See id.

371 Senville, supra, at 47-53.

372 Id. at 48-49.

373 Id. at 49-50. It is important to note that an appeal of the CCCH stormwater discharge permits before the Vermont Water Resources Board (WRB) upheld the legality of the permits. Re: CCCH Stormwater Discharge Permits (Docket Nos. WQ-02-11, WQ-03-05, 06 and 07 Consolidated), Finding of Facts, Conclusions of Law, and Order (Vermont Water Resources Board, October 4, 2004). The decision relied mainly on findings that both the construction and operation phases of the CCCH would comply with the Vermont Agency of Natural Resource’s (ANR) 2002 Vermont Stormwater Management Manual. See id. However, the decision expressed some concern over whether existing uses in non-impaired waters would be adequately protected. See id. at 32; see also, id. at 44 (where, in dissent, Board member Lawrence Bruce stated that “[A]lthough Vtrans has been planning the CCCH for approximately twenty years, neither this agency nor the ANR has conducted the necessary field and inventory work to assist the Secretary in making a determination of what constitute ‘existing uses’ of the receiving waters.”).

374 [VTRANS AND FHWA, REA, at AR 30002738]. In discussing this waiver of compliance with water quality standards for turbidity and aquatic habitat standards (referred to as a limited duration activity waiver), the WRB relied on testimony by ANR witnesses that the violations would be “short term and de minimus.” CCCH Stormwater Discharge Permit, supra, at 38 (emphasis in original).
a stream impaired due to sediment which runs through Williston and will be directly
affected by discharges from Segments A and B, are largely illusory. The REA states
that mitigation will primarily occur due to an offset plan, compliance with the Vermont
Agency of Natural Resource’s stormwater management manual, which prescribes certain
measures and practices to reduce, treat and control stormwater runoff, and the Allen
Brook TMDL. However, the proposed offset – reduction of winter sanding on Route 2
to compensate for the new sediment loading from the CCCH – has since been determined
to be already required under federal law regulating stormwater. Thus, there is no
offset. Additionally, the Allen Brook TMDL, which is relied upon by the REA as a
watershed clean-up plan that will be implemented to meet water quality standards in

375 NEPA requires a detailed discussion of mitigation impacts. See 42 U.S.C.A. § 4332(2)(C)(ii); 40 C.F.R.
§§ 1502.14(f), 1502.16(h), 1508.20; see also, Robertson, 490 U.S. at 351-352 (1989) (“[O]ne important
ingredient of an EIS is the discussion of steps that can be taken to mitigate adverse environmental
consequences.”) (citations omitted); National Audubon Society v. Hoffman, 132 F.3d 7, 16-17 (2nd Cir.
1997) (“mitigation measures [must] be supported by substantial evidence in order to avoid creating a
temptation for federal agencies to rely on mitigation proposals as a way to avoid preparation of an EIS”)
(emphasis supplied).

376 [See VTRANS AND FHWA, REA, at AR 30002732.]

377 See 40 C.F.R. § 122.34. The Water Resources Board, though upholding the legality of the permits for
the CCCH discharge, found the offset to be double counting, concluding that:

The Board notes that while Vtrans submitted its permit application in
July 2002, those regulations [governing discharges of stormwater from
US Route 2 where the proposed offset was to occur] were in full force
and effect even though ANR did not issue General Permit 9014
governing the small MS4s in Chittenden County, including US 2 in
Williston, until March 2003. Therefore, in the Board’s opinion, Vtrans
has a pre-existing obligation to reduce winter sand use on Route 2. …
Accordingly, the Sand Reduction Offset Plan proposed by Vtrans is not
a credible offset.

CCCH Stormwater Discharge Permits, supra, at 33-34. Yet, the Board still found that the overall
discharges from the CCCH would not result in an increased loading of pollutants into the receiving waters.
Id. at 32-36.

378 Again, it is worth noting that Judge Sessions did not find this analysis illegal under NEPA. Senville,
supra, at 49, 53.
Allen Brook and adequately account for CCCH and other discharges, has not been completed and may not be for some time.  

Therefore, Vtrans’ and FHWA’s mitigation analysis is in large part built upon double counting for an offset and a clean up plan for Allen Brook that does not exist. This is to say nothing of the REA’s complete lack of analysis regarding the potential discharges from growth and development—new or redistributed—attributable to the CCCH once it is built.

F. Failure to Consider Alternatives.

Since the alternatives analysis is the heart of the NEPA process, probably the most glaring inadequacy of the REA and FEIS is the limited range of alternatives considered. The REA did not perform an alternatives analysis separate from the 1986 FEIS.  

Judge Sessions ruled that this violated NEPA.  

The 1986 FEIS alternatives,

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379 See CCCH Stormwater Discharge Permits, supra, at 7 (“According to the 2002 § 303(d) List, ANR intended to complete a total maximum daily load (TMDL) for Allen Brook in 2002; however, ANR has not adopted a TMDL nor established wasteload allocations for Allen Brook to date.”).

380 It is worth noting the WRB also did not look at the possible effects of discharges from sprawling growth. See id. The Board only considered the increase of impervious surface in the Allen Brook watershed due to the CCCH itself. Id. at 22.

381 See [VTRANS AND FHWA, REA, at AR 30002665.]

382 Federal regulations governing EAs clearly state that an EA must include “brief discussions of … alternatives as required by sec. 102(2)(E) [of NEPA].” 40 C.F.R. § 1508.9(b). Section 102(2)(E) of NEPA states that federal agencies must “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C.A. § 4332(2)(E). Judge Sessions found that:

In a case such as this one, where consideration of alternatives was last documented eighteen years ago, where conflict over the use of resources is unresolved and substantial, and where the agency itself was unsure of the significance of new impacts, NEPA required that FHWA consider alternatives to its selected alternative in the environmental document it prepared. NEPA’s requirement is underscored by the CEQ regulation: an EA must include a brief discussion of alternatives. FHWA violated NEPA and CEQ regulations by preparing an EA that was intended to determine whether an SEIS was necessary without undertaking a brief analysis of alternatives to the project.
which Judge Sessions accepted as legal, are at best uninspired. To recap, the 1986 FEIS considered the following alternatives: no-action, alternative modes of transportation, rebuilding existing roadways, a limited-build alternative, a Susie Wilson Road connector, and three build alternatives (which were essentially different alignments for the highway). The FEIS’s look at alternative modes of transportation only considered expanded bus service, satellite parking lots, and van pools, and only looked at these alternatives in conjunction with the construction of a two-lane, rather than four-lane, CCCH.

Since the 1986 FEIS, a wealth of information on the efficacy of non-highway alternatives have come to light that was not available in 1986 or considered in the FEIS. For instance, the 1986 FEIS did not consider rail transit. But a recent study published in 2001 for the CCMPO concluded that use of rail transit was a key component to changes that may outperform the CCCH in improving congestion in the Burlington to Essex travel corridor. Also, the 1986 FEIS did not consider the use of roundabouts at troublesome intersections. Yet, recent studies have shown that reconfiguring problem intersections, such as a roundabout at five corners in Essex Junction, could provide substantial congestion relief at these intersections. Moreover, the 1986 FEIS did not look at a

Senville, supra, at 32-33 (citations omitted).

383 [VTRANS, 1986 FEIS, at AR 20005005.]

384 [Id. at AR 20005006-5008.] Judge Sessions found this look at alternatives to be reasonable for the purposes of the 1986 FEIS, underscoring the fact that an alternatives analysis under NEPA need not consider a necessarily broad array of alternatives. Senville, supra, at 18-20. Yet, Judge Sessions did provide some noteworthy commentary in arriving at his decision, calling the alternatives examined “hardly a model of rigorous exploration.” Id. at 19.

385 See e.g. DMJM+HARRIS, Burlington-Essex Corridor Alternatives Analysis.

386 See id. at ES-17.
combination of road way improvements and alternative modes of transportation, a failure recently found by a federal appeals court to be unreasonable in the context of NEPA review for a highway project.\textsuperscript{387}

Before it was apparently silenced, EPA was critical of the failure to examine alternatives in the EA and FEIS.\textsuperscript{388} EPA stated that:

\begin{quote}
[W]e believe that, at a minimum, the [traffic] model should be run for a new alternative both with and without the [proposed] rail line [from Burlington to Essex] and feeder bus system in operation, to determine whether this system, in combination with Transportation System Management (TSM) and Transportation Demand Management (TDM) measures, could improve transportation efficiency and reduce safety problems in Chittenden County to a degree that the need for the highway project changes. … [The Burlington to Essex] rail line is expected to carry 1,310 passengers in 2005 and 1,990 in 2025. These numbers are not trivial, and an analysis of their impact on the project should be incorporated into the analysis of the CCCH project and the information made public. In addition, TSM and TDM measures should be seriously analyzed to determine whether they should be implemented in place of the highway, or in addition to it.\textsuperscript{389}
\end{quote}

\textsuperscript{387} See Davis v. Mineta, 302 F.3d 1104, 1121-22 (10th Cir. 2002). In Davis, a case concerning a major highway project in Salt Lake County, Utah, the Court found that:

In addition to the possibility of expanding existing roads, options involving Transportation System Management (TSM) and mass transit were eliminated from study under the EA. The EA/4(f) rejected these options because, standing alone, they would not meet the purpose and need of the Project. However, no effort was made to consider TSM and mass transit together and/or in conjunction with alternative road expansion as a means of meeting Project goals. This represents one of the most egregious shortfalls of the EA.

\textsuperscript{Id.}

\textsuperscript{388} Varney Letter at TA-1.

\textsuperscript{389} \textit{Id.}
To allay the concerns of EPA, FHWA and Vtranslooked at limited TSM/TDM/rail options. The examination only used information that assumed that Segments A and B of the CCCH were going to be constructed and restricted consideration of TSM and TDM measures to those that would function in conjunction with the completed segments, not as an alternative to their construction. Judge Sessions found that this look did not meet NEPA’s requirement of an alternatives analysis.

Unfortunately, from the onset, FHWA and Vtrans conducted the NEPA process in a manner that failed to look at comprehensive alternatives to the CCCH as well as some comparatively inexpensive fixes, such as roundabouts, that might achieve similar or better congestion relief. While as a result of Judge Session’s ruling FHWA and Vtrans must perform a SEIS, it is important to emphasize the Judge Sessions ruling will not require FHWA and Vtrans to change some fundamental flaws in the REA, primarily the purpose and need and the segmenting of the CCCH. This could again allow for a study that only considers a restricted range of alternatives and convenient accounting regarding the costs and benefits of the highway. Such a study would not add much value in making a wise decision regarding the expenditure of the transportation funds at stake. In order for the SEIS to provide meaningful alternatives for consideration, fresh questions need to

390 [VTRANS AND FHWA, REA, at AR 30004261-4302].

391 [VTRANS AND FHWA, REA, at AR 30004261-4302]. [Without explanation,] this analysis also excluded any consideration of roundabouts. See id.

392 Judge Sessions characterizes the REA look at “alternatives” this way:

The section labeled “alternatives” … was not a consideration of alternatives, but an examination of the changes to the selected alternative and a justification for constructing the next segments. The FREA did not consider alternatives to the proposed project. The Defendants deemed it unnecessary….

Senville, supra, at 30-31 (citations omitted).
be asked by FHWA and Vtrans about how the region can best relieve congestion and accomplish its growth goals.
PART V: GETTING FROM HERE TO THERE: USING NEPA TO ARRIVE AT A SUSTAINABLE TRANSPORTATION SOLUTION FOR CHITTENDEN COUNTY

At no time in the CCCH’s history has there been a serious evaluation of how this transportation investment could be made in manner favoring smart growth oversprawl. Thinking and knowledge regarding the transportation and land use nexus has evolved tremendously since the time of the genesis of the CCCH. The law has similarly evolved to allow for more flexibility in spending and to shift the focus of federal spending from highways to more balanced transportation investments.393 However, the CCCH project lumbers on, and the REA and FEIS pay little heed to almost forty years of learned experience and policy changes that are in many ways antithetical to the highway.

With the SEIS, the window has opened for a serious examination of alternatives to the highway that pay close attention to cost, efficacy and sprawl. However, there is a risk that this opportunity will be squandered if the right alternatives are not considered. Below are outlined certain alternative approaches for relieving congestion that might build the road to better investment and a smart growth future for Chittenden County.

393 Transportation funding and planning law today is much more flexible and responsive to the needs of multi-modal transportation. Both the 1991 Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the Twenty First century (TEA-21) revolutionized transportation planning and funding. See U.S Department of Transportation, “A Guide to Metropolitan Planning Under ISTEA – How the Pieces Fit Together,” available at (http://ntl.bts.gov/DOCS/424MTP.html) site last visited November 17, 2004 [hereinafter US DOT, “A Guide to Metropolitan Planning Under ISTEA”]; SURFACE TRANSPORTATION POLICY PROJECT, Ten Years of Progress: Building Better Communities Through Transportation (November 2001); EDWARD BEIMBORN AND ROBERT PUENTES, Highways and Transit: Leveling the Playing Field in Federal Transportation Policy 3-4 (The Brookings Institution: Center on Urban and Metropolitan Policy, December 2003). ISTEA and TEA-21 allow for more flexible spending of federal transportation funds. See id. These statutes now require a link between long range plan for an area and the TIP, realization of air quality goals, and the provision of funding for ‘non-transportation’ items that can enhance communities and transportation in ways that are not capacity adding – provisions that stress a framework for transportation investments that reach well beyond capacity expansion and towards the goals of multi-modal transportation that improve environmental quality. 23 U.S.C.A § 134; US DOT, “A Guide to Metropolitan Planning Under ISTEA,” at 8. Chittenden County’s Long Range Transportation Plan was born from these newer laws. See 23 U.S.C.A § 134(f) and (g).
A. **Highway Opponents Offer an Innovative Solution.**

While it can be suspected that the plaintiffs in *Senville* would not be too upset to see the CCCH stopped, their ultimate objective appears to be a serious evaluation of and investment in transportation infrastructure that does not induce sprawl, but instead addresses congestion and fosters sustainable land use patterns. This can be evidenced in their actions taken both prior to and after the litigation.

Citing the perceived importance of the highway to IBM, shortly after the REA was issued in Spring of 2003 and before litigation was filed, CLF and FOE, plaintiffs in the CCCH litigation, publicly put forth a proposal to allow partial completion of the highway to commence in return for sprawl curbing measures.\(^{394}\) The proposal would have allowed the Williston Section of the CCCH to go forward as planned, giving IBM direct access to Interstate 89 and hopefully diffusing the political issues IBM brings to the project.\(^{395}\) In exchange for this, CLF and FOE asked for investment in rail and other modes of transportation, a moratorium on further highway building until a study of alternative transportation was performed, land controls put in place to deter the sprawling effects of the highway’s partial construction, and implementation of watershed cleanup plans for waterways affected by the highway.\(^{396}\) The offer was rejected due in part to justifications that the highway was needed, other processes would adequately look at


\(^{395}\) *See id.*

\(^{396}\) *Id.*
different transportation components for the County, and, perhaps, a buoyed sense on the part of Vtrans and FHWA that they would prevail on the NEPA suit.\footnote{Letter from Patricia A. McDonald, Secretary, Vermont Agency of Transportation, to Mark A. Sinclair, Esq., Conservation Law Foundation and Brian S. Dunkiel, Esq., Shems, Dunkiel & Kassell, PLLC (August 14, 2003) (rejecting CLF’s and FOE’s offer).}

Now, with a new SEIS process about to begin, the Vermont Smart Growth Collaborative (VSGC) – which includes Senville plaintiffs CLF, FOE, VPIRG, as well as other groups – have taken it upon themselves to introduce a study of alternatives to the CCCH that demonstrate that the benefits of the CCCH can be achieved with lower cost, lower impact alternatives consistent with the region’s growth goals.\footnote{SMART MOBILITY, INC. AND OMAN ANALYTICS, Alternatives to the Circ Highway, DRAFT (prepared for the Vermont Smart Growth Collaborative, October 2004) [hereinafter SMI AND OA].} VSGC has produced a study that lays out two such alternatives.

The first VSGC alternative consists of a comprehensive and systematic use of measures not explored by the REA or FEIS that improve existing roadways and intersections.\footnote{Id. at 13-23.} VSCG’s approach stresses improving the function of points where congestion occurs, like intersections, so more cars can pass through these points at a faster rate, thus reducing congestion, rather than the more expensive approach taken by the CCCH, which seeks to increase overall lane capacity in an attempt to divert traffic away from problem areas.\footnote{[See id. at 1, 13-23.]} VSGC’s measures include roundabouts and other traffic improvements, like multimodal boulevards, which are designed to accommodate several modes of transportation such as cars, pedestrian use, bicycle use, and transit, with
medians to moderate speeds and enhance safety and turn lanes structured to function at a high rate of efficiency.\textsuperscript{401}

The second VSGC alternative consists of the measures contained in the first alternative constructed in combination with a surface street in the right of way of the CCCH that has an interchange with I-89 and would give IBM direct access to the interstate.\textsuperscript{402} The new road would not have the other interchanges that the CCCH would have nor would it connect with the already constructed Essex portion of the CCCH.\textsuperscript{403} Rather than creating interchanges that precipitate sprawl, the IBM access street would intersect with local roads and provide an opportunity for compact growth to occur by allowing connector streets to develop in a grid street system near both an existing school as well as with the commercial areas of Taft Corners and Essex Junction.\textsuperscript{404} The study does not require either transit or land use modifications for its alternatives to work.\textsuperscript{405}

Unlike the REA, VSGC proposes a purpose and need for the alternatives to “foster the desired land use pattern of the towns and region by providing improved accessibility in the Route 2A corridor, and the Taft Corners and Five Corners growth centers [the area to be serviced by the CCCH A and B sections], without increasing the capacity of major suburban-suburban connections or significant access improvements to outlying communities.”\textsuperscript{406} For the second alternative with a surface street in the right of

\textsuperscript{401}\textsuperscript{1} Id.
\textsuperscript{402}\textsuperscript{2} Id. at 24-28.
\textsuperscript{403}\textsuperscript{3} Id.
\textsuperscript{404}\textsuperscript{4} Id. at 24-25.
\textsuperscript{405}\textsuperscript{5} Id. at 1.
\textsuperscript{406}\textsuperscript{6} Id. at 13.
the way of the CCCH, VSGC adds a further purpose of “creat[ing] opportunities for traditional neighborhood development designed with a well connected, gridded street network. A higher density, mixed use new neighborhood, facilitated by this plan, and can be accompanied [sic] by further conservation efforts in rural lands in Williston, which their town plan has identified in their open space plan for conservation.” Thus, unlike the REA which largely ignores area land use goals, the VSGC alternatives seek to achieve mobility benefits that further these goals.

This approach put forth by the VSGC is remarkable for both its practicality and its efficacy. According to VSGC’s analysis, their alternatives greatly outperform the CCCH, providing a level of service of between A and C at major intersections (like five corners in Essex Junction) targeted for improvement by the CCCH Segments A and B. The CCCH, on the other hand, leaves these intersections performing at levels of service between C and F. Moreover, both alternatives put forth by VSGC are, according to their study, less costly in pure dollar terms than the CCCH, with the first alternative (no surface street) being significantly less.

407 Id. at 24.
408 Id. at 2. For instance, for PM Peak Traffic for six major intersections in the Route 2A corridor targeted for improvement by the CCCH’s A and B construction, the CCCH is projected to have one intersection operating at a level of service (LOS) of F, two intersections operating at a LOS of E, two operating at a LOS of D and one operating at a LOS of C in the year 2023. Id. Meanwhile, the VSCG Plan A is projected to have four of these intersections operating at a LOS of B, one at C, and one at A in the year 2023. Id. VSCG Plan B (which includes the surface street in the CCCH right of way) is projected to have four of these intersections operating at a LOS of B and two operating at a LOS of A. Id. The most drastic improvement is at the troublesome five corners in Essex Junction, which is projected to operate at a LOS of F in 2023 with the CCCH’s construction, but would operate at a LOS of A under VSGC Plan A and a LOS of B under VSGC Plan B. Id.
409 Id.
410 The VSGC study projects that Plan A (no surface street) will cost approximately $20 million to construct. Id. at 28. Plan B (a surface street in the CCCH right of way) is projected to cost about $43
The VSGC study relies quite heavily on the use of roundabouts, which provide a very efficient and high capacity way to manage problem intersections, where most traffic congestion accumulates. The study also notes that some of these roundabouts need to be carefully designed to avoid impacts on historical structures and to ensure options for pedestrian use. It will be interesting to see how thoroughly FHWA and Vtrans consider these alternatives once they are publicly introduced in February.

Regardless, the VSGC study demonstrates that a common sense, low cost alternative may, in the context of highway construction, be a much less impactful way of achieving the same or greater benefits than highway capacity expansion without having to make land use changes or substantial investment in public transit. While these types of measures may not always lead to results that outperform capacity expansion, their presentation by VSGC dramatically points to the shortcomings of both the CCCH, which was easily outperformed, and the REA, which failed to even consider such low-cost solutions.

B. Using NEPA to Change the Transportation Paradime: the LUTRAQ Experience

While the final result of its effort cannot be foretold, the VSGC has already used the window provided by NEPA to demonstrate how alternatives can provide the benefits of the highway without opening up lands to sprawl. VSGC can take heart that in Oregon, NEPA provided a successful opportunity for smart growth groups to fundamentally

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411 See id. at 11-12.

412 See id. at 16-22 (discussing design of proposed roundabouts).
change an area’s thinking about transportation. In 1988, the Oregon Department of Transportation (ODOT) was advocating for a Western Bypass highway to address congestion concerns in the western suburban communities of Hillsboro, Beaverton and Tigard in Washington County, the center of the Portland Metropolitan area. 1,000 Friends of Oregon (Friends), a non-profit advocacy group that monitors land use planning, along with other groups, opposed the highway. Friends began their opposition through legal challenges at the regional planning level. However, they quickly made a decision that in order to truly effectuate a change in the plans to construct a bypass highway, a more positive response was needed. The EIS that was being performed by ODOT provided an opportunity for Friends to introduce such a response.

The original scope of alternatives envisioned by ODOT was strikingly similar to those Vtrans and FHWA have introduced: No Build; Transportation System Management; Arterial Expansion/High Occupancy Vehicle Express Service; and the Bypass Highway. Like the FEIS and the REA, ODOT was only planning to consider alternatives, other than no-build, that focused on highway construction or minor improvements to the existing transportation infrastructure. A land use based

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414 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 1.

415 Id. at 171; PARSONS, Technical Report, at 31.

416 Id.

417 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 17; PARSONS, Technical Report, at 31-32.


419 Id.
alternative was neither on the drawing board, nor did certain agencies even believe that such an alternative was possible.\textsuperscript{420}

Using the EIS process as an opening, Friends decided to come up with its own alternative.\textsuperscript{421} This alternative became LUTRAQ—the Land Use Transportation Air Quality connection.\textsuperscript{422}

LUTRAQ was premised on a very basic assumption: land uses need not be viewed as a constant when addressing transportation concerns.\textsuperscript{423} Instead, LUTRAQ created an alternative suburban land-development pattern that located most household and employment growth on land near planned transit service areas.\textsuperscript{424} Originally skeptical that such an approach was even possible, ODOT ended up not only including Friends LUTRAQ alternative in its evaluation, but eventually chose it when it was shown to outperform the highway on virtually every level and comply with air quality laws.\textsuperscript{425}

Far from being a radically new way of looking at land use and transportation, LUTRAQ largely looked back to the transit friendly designs of the early part of the twentieth century to construct a proposal that centered growth around transit and shaped growth in a manner that did not require dependence on the automobile.\textsuperscript{426} LUTRAQ was sculpted on three central principles: (1) land use plans should direct higher intensity

\textsuperscript{420} Id. at 30 and 32.

\textsuperscript{421} 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 1; PARSONS, Technical Report, at 30.

\textsuperscript{422} Id.


\textsuperscript{424} Id.

\textsuperscript{425} PARSONS, Technical Report, at 32.

\textsuperscript{426} 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 8; PARSONS, Technical Report, at 36.
development to locations well-served by transit and should ensure that development is
designed for pedestrians, bicyclists and transit riders, as well as auto drivers; (2) the
transportation system should be structured to serve and reinforce the nature of that
development; and (3) market strategies should support that development by correcting
some of the current distortions in the pricing of the transportation system and other public
facilities.  

A primary feature of the LUTRAQ project is transit-oriented development
(TOD). A LUTRAQ report describes TOD this way:

The TOD concept is simple: moderate- and high-density
housing, along with complementing public uses, jobs,
retail, and services, are concentrated in mixed-use
developments located at strategic points along the regional
transit system. Each TOD has a centrally located transit
stop and core commercial area. Accompanying residential
and/or employment uses are within an average 2,000 feet
walking distance. The location, design, configuration, and
mix of uses in a TOD provides an alternative to current
suburban development trends by emphasizing a pedestrian-
oriented environment and reinforcing the use of public
transportation.

LUTRAQ redesigned current suburban land use patterns to plan for three types of TOD
areas: Mixed-Use Centers taking advantage of traditional downtown areas to create
walkable areas with a high intensity of commercial areas, jobs, residences and shopping;
Urban TOD areas located outside of Mixed-Use Centers that are more appropriate for
high to medium density residential development with a core commercial area; and
Neighborhood TOD areas to emphasize medium density residential development and

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427 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 7.
428 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 8; PARSONS, Technical Report, at 36.
local retail. It was found that such TOD areas could accommodate 65% of new residential development and 78% of the new jobs projected for Washington County.

The transit component of LUTRAQ sought to ensure that transit served these TOD areas. Primarily, two light rail lines and express buses serving TOD areas were proposed. Feeder buses were also proposed to serve residential areas not directly serviced by light rail or express busing. Bicycle and pedestrian improvements and roadway improvements were further included. Moreover, street designs were made to provide a grid, or connected system, to link local destinations and thereby alleviate pressure from arterial roads. New highway construction was not part of the LUTRAQ alternative.

Additionally, the LUTRAQ alternative contemplated some market strategies designed to correct public policies that arguably favor automobile use. Primarily, the LUTRAQ alternative imposed a parking charge on solo drivers to work sites within the study area that was not imposed on carpoolers and those not arriving at work

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430 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 8-10; PARSONS, Technical Report, at 36.
432 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 11; PARSONS, Technical Report, at 36.
433 Id.
434 Id.
435 Id.
436 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 8.
437 Id. at 16.
438 See id. at 12.
destinations. Further, workers within the study area were provided with free transit, with transit costs being, at least in part, funded by revenues from solo drivers who were to be charged a parking fee.


In the final analysis, it was no contest. The LUTRAQ alternative put forth by Friends outperformed the Highways Only alternative by every measure and a Highways Only with Parking Pricing (charging solo drivers who commute to work) in every measure except one – reduction in Vehicles Hours of Delay.

For instance, for total home based work trips, automobiles would account for 88.7% of trips under the Highways Only alternative, but only 78.3% under the LUTRAQ alternative for the total study area and a mere 66.7% for TOD areas, with all other trips occurring by transit, walking or biking. Autowhatership would drop from 1.9 autos per household under the Highways Only alternative to 1.82 autos per household under LUTRAQ, with that numbering further declining to 1.63 for the TOD areas. Vehicle trips per household per day would drop from 7.5 under the Highways Only alternative to

\[^{439}\]Id.

\[^{440}\]Id.

\[^{441}\]CAMBRIDGE SYSTEMATICS, INC. AND PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC., Making the Land Use Transportation and Air Quality Connection: Analysis of Alternatives: Volume 5 21 (prepared for 1000 Friends of Oregon, May 1996) [hereinafter CAMBRIDGE SYSTEMATICS AND PARSONS, Analysis of Alternatives]. The Highways Only with Parking Pricing alternative was projected to reduce P.M. Peak Hour Vehicle Hours of Delay by 58.7% over No Build; LUTRAQ by 53.2%. Moreover, there was no accounting for induced travel, so the benefits of the Highway Only with Parking Pricing alternative may be exaggerated. Id.

\[^{442}\]Id. at 15. The figure was 89.7% for No Build. Id.

\[^{443}\]Id. at 13. The figure was 1.91 for No Build. Id.
7.17 under the LUTRAQ alternative (5.79 for TOD areas). There would be a 43% reduction in Vehicle Hours of Delay (P.M. Peak Hour) under the Highways Only alternative, but this reduction would be 53.2% under LUTRAQ. Vehicle Hours of Delay (P.M. Peak Hour) would go from a 5.6% reduction compared to No-Build for the Highways Only alternative to a 15.7% reduction under LUTRAQ. Also, daily VMT would actually increase for the Highways Only alternative compared to No-Build by 1.6%, but drop by 6.4% under the LUTRAQ Alternative.

Similarly, air quality would benefit from the LUTRAQ alternative while the Highways Only alternative would cause further air pollution when compared to the No-Build alternative. Under the Highways Only alternative, emissions of hydrocarbons (HC) and carbon monoxide (CO) were projected to only decrease slightly compared to the No-Build alternative (0.2% and 0.6% respectively). Meanwhile, nitrogen oxides (NOx) were projected to increase compared to No-Build by 6.7%. However, the LUTRAQ alternative demonstrated reductions in all of these pollutants compared to the No-Build alternative – HC by 6.2%, NOx by 2.6% and CO by 6.7%. Similarly, the Highways Only alternative saw increases of 1.6% compared to the No-Build alternative.

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444 Id. at 20. The figure was 7.53 for No-Build. Id.
445 Id. at 21.
446 Id. at 24.
447 Id.
448 Id. at 25-26.
449 Id. at 24-25.
450 Id.
451 Id.
in emissions of the greenhouse gases methane (CH₄), nitrous oxide (N₂O), and carbon
dioxide (CO₂), as well as an energy consumption increase of 1.6% compared to No-
Build. Meanwhile, the LUTRAQ alternative showed a projected reduction of 6.4% in
emissions of CH₄, N₂O and CO₂, as well as a 6.4% reduction in energy consumption,
compared to No-Build.  

2. Choosing LUTRAQ.

The LUTRAQ alternative was published in 1992, and with the help of Friends and
other groups, ODOT accepted it as an alternative in the EIS process. When the EIS
process concluded in 1995, LUTRAQ became the only viable alternative since it was the
sole alternative considered that would both comply with the Clean Air Act and be
consistent with Oregon’s growth containment policies. In the summer of 1996, ODOT
recommended LUTRAQ plus limited road improvements as the preferred alternative.
Friends had successfully used NEPA to turn transportation thinking in Oregon on its head
and the Western Bypass was abandoned.

C. LUTRAQ’s Lessons for Vermont.

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452 Id. at 25.
453 Id.
454 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 16; PARSONS, Technical Report, at
32.
455 Id.
456 Id.
457 Id.
There are many lessons that can be drawn from the LUTRAQ experience. Primarily, it shows the importance of citizen participation that NEPA and other similar processes provide, and the need for concerned groups to take advantage of such opportunities to provide a fresh vantage point towards solving transportation problems. If Friends had not initiated the LUTRAQ study, there is little to indicate that ODOT would have looked “outside the box” for such an innovative solution. In fact, such thinking was originally viewed by agency proponents of the Bypass as impracticable, or impossible. LUTRAQ represented a fundamental change in thinking about transportation issues in Oregon that defied the previously institutionalized approaches. Vermont is in need of a similar epiphany.

LUTRAQ itself may or may not be a viable option for Chittenden County. There are some very significant differences between the Portland area and Chittenden County, such as size and Oregon’s strong state land use law that greatly empowers a regional planning body and has imposed an Urban Growth Boundary (UGB) which contains the limits of growth in the Portland metropolitan area. However, the Burlington region does have other tools at its disposal that may be useful in both containing sprawl and fostering land use patterns that will reduce congestion. At the least, a land use based alternative should be explored in the SEIS.

Perhaps one of the biggest questions regarding a land use alternative in Chittenden County is how and to what extent TOD might be work in the region. Studies

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459 See id.
460 Id. at 59. Washington County’s population is 445,342. 2000 U.S. Census.
suggest that, to be effective, TOD must not just be adjacent to transit, but truly orientated
to transit – this means that development must be “mixed-use, walkable, location-efficient
development that balances the need for sufficient density to support convenient transit
service with the scale of the community.” Moreover, size should not necessarily be
seen as a barrier to TOD. The past has shown, given the pre-1950s success of transit
particularly in Burlington, that TOD may be able to work in Chittenden County. Also,
studies have stressed that the success of TOD depends more on how the growth functions
rather than a region’s size.

In order for Chittenden County to realize TOD growth, a land use based
alternative would have to incorporate and implement measures of planning, design (or
functionality) and transportation infrastructure investment that connects TOD areas. First, planning measures would have to regionally promote TOD. It is encouraging that
some efforts in the County at planning already reflect principals compatible with TOD.
For instance, Essex Junction has implemented zoning provisions for its new town center
where buildings must have mixed uses, entrances on public streets, shared parking, and
multiple stories. But this is not true of many Chittenden County towns, where uses are

461 Dena Belzer and Gerald Autler, Transit Orientated Development: Moving from Rhetoric to
Reality, Foreword (The Brookings Institution Center on Urban and Metropolitan Policy and The Greater
American Station Foundation, June 2002) [hereinafter Belzer and Autler, TOD].

462 See note 234, supra.

463 See Belzer and Autler, TOD, at 22 (finding that the size of an area (mostly larger areas) is not as
important to the viability of TOD as is the way development patterns function).

464 See e.g. Belzer and Autler, TOD; Smart Growth Network and International City/County
[hereinafter SGN and ICCMA, Getting to Smart Growth] (detailing ways to incorporate land use design
into transportation infrastructure).

465 CLF and VFOS, Community Rules, 53; Email Correspondence from Elizabeth Humstone, Executive
Director and Urban Planner, Vermont Forum on Sprawl (December 7, 2004).
separated, parking requirements encourage large parking lots and building set-backs, large, single-story box stores are allowed, strip, rather than node development is permitted, and amenities for pedestrian and bicycle use are few. In some towns, like Williston, significant sprawling, auto-dependent growth has already occurred that is not compatible with TOD.

Yet, simply planning for compact, mixed use growth and building nearby transit is not enough. TOD must also be properly designed to incorporate transit and pedestrian use in a manner that is safe, convenient and easy. A recent study has identified six components relating to design that allow for TOD to work. These are: (1) location efficiency, which entails mixed-use, pedestrian friendly areas with dense growth patterns where driving is an option, not a necessity; (2) value recapture, or achieved savings from having multi-modal options both publicly (a reduced need for expensive transportation projects, such as highways) and privately (saved costs on gas, parking, number of cars per household, etc.); (3) livability, which is of course subjective, but here is measured by decreased commute burdens, improved access to retail, services, recreational and

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466 Email Correspondence from Elizabeth Humstone, Executive Director and Urban Planner, Vermont Forum on Sprawl (December 7, 2004); see BELZER AND AUTLER, TOD, at 18-27; CLF AND VFOS, Community Rules, at 49-63 (describing suburban growth planning and ways to achieve smart growth goals in suburban planning).

467 Id.

468 See SGN AND ICCMA, Getting to Smart Growth, at 25-32; BELZER AND AUTLER, TOD, at 8-17; CLF AND VFOS, Community Rules (all detailing at various points examples of how large parking lots, major roadways without easy crossing points, intimidating traffic conditions, long distances between uses, and other impediments to pedestrian use discourage people from using transit and other non-automobile modes of transportation and cause TOD areas to fail).

469 BELZER AND AUTLER, TOD, at 11-12.

470 This can include the idea of “location efficient mortgages,” a market mechanism that allows potential home-owners to borrow more money if they buy in a designated location where it can be shown that they will be able to reduce their transportation costs. BELZER AND AUTLER, TOD, at 11-12.
cultural opportunities, improved environmental quality, and the like; (4) financial return, for both private investors and the public, which may realize greater tax return from local retail sales, greater property values and less demand on services for TOD than for more disperse growth; (5) choice, in housing, retail, and transportation; and (6) efficient land use patterns preserving open space and farmland, allowing for shorter commutes and fostering improved environmental quality. 471

There will be many other challenges to any alternative seeking to implement TOD in Chittenden County. 472 Many of these are problems of perception. For instance, people may be fearful of the character of their neighborhoods or communities changing if, for instance, mixed uses and housing types are promoted. 473 Suburban developers and investors may be likely to believe that TOD is a riskier proposition than the sprawling development they are accustomed to, being reluctant to develop in an area where parking is limited and transit or pedestrian access is the principal means of reaching the development. 474 There is also a chicken and egg problem. For TOD to work, good transit infrastructure must be in place. 475 For transit to work, TOD must exist. 476 What gets built first and how can investors, public and private, be talked into funding

471 BElzer and Autler, TOD, at 9-17.

472 Id. at 18-27.

473 See id.

474 See id.; SGN and ICCMA, Getting to Smart Growth, at 4 (“Financiers view mixed-use development as complex and difficult.”).

475 See Belzer and Autler, TOD, at 24; SGN and ICCMA, Getting to Smart Growth, at 61-67.

476 See id.
development that may not be successful because it may not be fully or properly implemented?\textsuperscript{477}

Thus, coordinating the moving parts needed to achieve TOD – local planning, regional goals, provision of infrastructure, attracting the right public and private investors, and ensuring proper design – is not an easy task to pull off. Commitment must come from many sectors or any effort is likely to end in failure.\textsuperscript{478} Without leadership and follow through, getting this commitment is unlikely.\textsuperscript{479}

While it is true that the Burlington region’s size, lack of an UGB or strong regional planning entity and other factors present challenges to a land use based alternative, an honest assessment of such an alternative may reveal that it is quite viable. It is important to remember that, until it was explored, conventional wisdom in Portland was that a land use based alternative there was not practical. Unless the question is asked and examined, it will not be answered.

\textsuperscript{477} See id.

\textsuperscript{478} BELZER AND AUTLER, TOD at 26 -27.

\textsuperscript{479} This was certainly the case for Portland, where ultimately cooperation between groups like Friends and involved agencies made LUTRAQ possible. See 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project. Similarly, in Plano, TX, outside Dallas, a plan for TOD based around a new rail line and station came about in large part due to the aggressive leadership of the City to realize TOD and its appointment of an official to oversee all aspects of the process, including investing in infrastructure. See BELZER AND AUTLER, TOD at 26. This leadership by the City helped investors achieve a comfort level to invest and develop there. See id.

It is also worth noting that another example of sometimes successful TOD growth, particularly in certain suburban communities, is seen in “new urbanism,” where communities use mixed use development, transit, community centers, use by car and walking, and other smart growth ideas to create development that reflects traditional growth centers reminiscent of the early transit-oriented “street-car” suburbs. See CLF AND VFOS, Community Rules, at 50. The Kentlands in Gaithersberg, Maryland is a frequently cited example of a “new urbanist” community that has found success by mixing uses, housing types, public transit options, and traditional development patterns. See e.g., id. at 50. However, new urbanism has its share of detractors who argue that, while preferable to much suburban growth, it is still new growth on the outskirts of urban areas that often comes at the expense of downtown areas with existing smart growth qualities where investment in revitalization would provided the same smart growth benefits without developing new land. See e.g. MARSHALL, supra, 1-39 (comparing “new urbanist” Celebration, Florida to Kissimmee, Florida, a nearby traditional growth center in need of revitalization).
D. The Burlington-Essex Corridor Study: A Blueprint for Smart Growth Based
Transportation Investment in Chittenden County.

Approximately a year before the REA was issued, a separate transportation study for the region took a very different approach than the REA in its consideration of the area’s land use goals.480 Spurred by data suggesting that congestion along the Burlington to Essex travel corridor, which contains approximately half of the County’s jobs and traffic,481 will drastically increase over the next couple of decades, the CCMPO set out to determine how best to alleviate the anticipated future traffic problems.482 The CCMPO commissioned a study of alternative solutions to best approach the increase of stress in the corridor.483

Unlike the REA, in analyzing possible alternative solutions for the corridor, the study expressly recognizes the region’s land use and transportation goals and incorporates these goals in the purpose and need of the study.484 The study takes into account the need to “provide balanced funding to all transportation modes so that opportunities for intermodal services can be fully achieved,” declares that “[p]rograms designed exclusively to increase highway capacity for single-occupant vehicles should be

480 See DMJM+HARRIS, Burlington-Essex Corridor Alternatives Analysis.

481 The travel corridor extends from Burlington through Winooski to Essex Junction, with Vermont Route 15 as its spine. Downtown Burlington, downtown Winooski, portions of Colchester, Essex Junction, two major universities, two major area hospital campuses and IBM are all located within the corridor. Id. at ES-7 – ES-9.

482 See id. at Chapter 2. Data suggests that the corridor will experience a 60% increase in daily person trips from 2000 to 2025, a 51% increase in daily VMTs for that period and an overall increase in peak hour VMT congested traffic of 374% for the time frame. Id. at 2-4.

483 See id. at Chapter 2.

484 See id. at 2-5 – 2-6.
undertaken only when no better alternative can be found,” and states an objective to “decrease automobile and truck dependency by offering sustainable transportation alternatives.”

The study looks at five alternative solutions for the corridor: No-Build (which assumes construction of the CCCH sections A-B, but not sections G-J, the final Colchester section of the highway); Transportation System Management, which consists of certain road and intersection changes, increased bus service and two new bus routes; Highway, which consists of completion of the CCCH, new interchange construction and widening of Route 15; Commuter Rail, which consists of upgrading a preexisting freight line from Burlington to Essex, and running commuter trains either hourly or half-hourly with feeder bus service from train stations to various locations (this alternative also assumed operation of a Charlotte to Burlington flyer, which Governor Douglas discontinued); and an Express Bus alternative, which would upgrade existing bus

485 Id. at 2-6.

486 B.J Roche, “N.E. Scores Poorly on Smog Test,” BOSTON GLOBE (May 4, 2003); see also CCMPO, TRANSACTIONS 1 (April/May 2003) (interview with Vtrans Secretary Patricia McDonald discussing the suspension of the Champlain Flyer’s service); Jim Douglas, “The Douglas Vision: A Plan for Prosperity,” available at (http://www.vermontgop.org/vision10.htm) site last visited December 6, 2004 (stating that one of his transportation policy components was termination of the Champlain Flyer). The Champlain Flyer perhaps illustrates some of the pitfalls of transit investment. While the Flyer connected to Burlington, which has components that make it quite amenable to transit, its origination and destination locations in neighboring Shelburne and Charlotte were not connected to areas particularly well-suited to transit, as the stops were, for the most part, not near growth centers or walkable to many homes, shops or other uses. The rail also did not extend a long distance, only 12 miles, and other than Burlington, did not service a dense population center. Most successful commuter rail extends longer distances between two or more dense population centers. Moreover, the Flyer’s Burlington station was on the waterfront, an arguably inconvenient location which is about one-half mile from most retail and downtown employment destinations and just under a mile from the University of Vermont and Fletcher-Allen hospital, both major employers. This is a long walk for commuters, especially uphill and in winter. Email Correspondence from Michael Oman, Transportation and Planning Consultant, Transportation Planning Director, CCMPO, 1992-1997 (December 14, 2004); see also CCMPO, TransActions, supra, at 1 (where Vtrans Secretary McDonald notes that a successful commuter train must be affordable, convenient and connect substantial population bases. She further states that if federal funding is available, Vtrans has a goal to reinstate commuter rail connecting larger population bases such as Burlington and Middlebury.).
service and have a series of feeder bus routes to make usability easier for residents and workers in the corridor.\textsuperscript{487}

The study did not specifically look at land use changes, either alone or in conjunction with certain infrastructure improvements, as an alternative.\textsuperscript{488} However, the study is a stark contrast to the REA in that it considers alternatives that foster the region’s growth goals and notes that highway construction is likely to be counter to those goals. For instance, in discussing the commuter rail alternative, the study finds that:

Rail facilities have a demonstrated history of promoting more dense land use around stations and along the rail line. … The change in land use is compatible with the county’s established growth center policies, and has the potential to encourage development that would further promote those policies.\textsuperscript{489}

In contrast, the study finds that:

The Highway alternative [which consists largely of the completion of the CCCH], because it entails construction of infrastructure on land currently being used for other purposes, much of it undeveloped, has the potential for serious environmental impacts. Construction of major transportation facility far from existing nodes of development is likely to work against growth-center based development.\textsuperscript{490}

The study notes the severe environmental impacts of highway development, showing that the Highway alternative would have “significant impacts” on land use,

\textsuperscript{487} DMJM+HARRIS, Burlington-Essex Corridor Alternatives Analysis, at ES-12 – ES 23 and Chapter 4.

\textsuperscript{488} See id.

\textsuperscript{489} Id. at ES-22.

\textsuperscript{490} Id. at 6-10.
wetlands and floodplains.\textsuperscript{491} The study finds that no other alternative would have such significant impacts.\textsuperscript{492}

The study dances around the question of whether or not to endorse the politically charged CCCH, stating that since the CCCH “originated from efforts outside of this analysis, it is recommended that the concept[] be developed further through separate analysis.”\textsuperscript{493} Yet, the study leaves a major increase in highway capacity out of its final recommendation, and instead endorses a combination of TSM, rail, bus and minor road and intersection improvements, such as a roundabout at Essex Junction’s five corners, as the best solution for the corridor.\textsuperscript{494}

By focusing on the overall impacts of transportation choices on land use patterns and smart growth goals, the Burlington-Essex study is arguably a more balanced and forward-looking study than the REA. It openly acknowledges the high cost and potentially sprawling effects of highways. It discusses solutions that will foster the

\begin{itemize}
  \item \textsuperscript{491} Id. at ES-29, Figure ES-10.
  \item \textsuperscript{492} Id. In addition, while acknowledging certain benefits of the construction of the CCCH, such as enhancing regional connectivity, the report also pokes some holes in the myths surrounding the need for the CCCH. \textit{See id.} at 4-17 and 6-10. Primarily, the report concludes that the CCCH will not have an overall benefit for Route 15, because it will merely redirect traffic from certain intersections to others, and will, in fact, cause a significant increase in traffic flowing into the troubled Essex five corners. \textit{Id.} at 4-17. In contrast, the study concludes that “[t]he commuter rail alternative offers the potential to increase the capacity of the corridor far beyond what would be possible with highway improvements.” \textit{Id.} at 8-2. However, the report does express that this capacity may not be fully realized due to low ridership. \textit{Id.} Cost is also a factor. Of all the alternatives looked at, the Highway alternative “has the highest capital costs.” \textit{Id.} at 6-10. Costs are estimated at about $70 million. \textit{Id.} at ES-18. Rail costs are also expensive, especially if half hour service is provided, but still less costly than highway construction. \textit{Id.} at ES-22. Hourly rail service would cost $23 million, excluding stations; half hourly rail service would cost $62.5 million excluding stations. Stations would add about $3.6 to 5.2 million in cost. \textit{Id.}
  \item \textsuperscript{493} Id. at 8-1.
  \item \textsuperscript{494} Id. at Chapter 8. While the study repeatedly notes that the CCCH will actually worsen traffic performance at Essex Junction’s five corners, it states that a roundabout has the ability to bring the intersection to LOS of A. \textit{Id.} at ES-17. However, the report states that further study of a roundabout is needed to assess its impacts on pedestrian and bicycle use. \textit{Id.}
\end{itemize}
County’s land use goals and could provide opportunity for TOD. By doing so, it looks much less favorably upon both the benefits and potential costs of highway capacity expansion. As such, the study endorses a solution more akin to that put forth by the VSGC than to the CCCH.

E. Looking Forward: A Vision for a Sustainable Transportation Solution in Chittenden County.

By asking the right questions about the effects transportation investment can have on land use and framing alternatives to answer those tough questions, both the VSGC study and the Burlington to Essex corridor study begin to shed light on the high costs and slim benefits of the CCCH. A land use based alternative may further reveal the CCCH to be a poor investment in comparison.

The CCRPC has already set as a goal to:

- Improve the mass transit system by the expansion of the Chittenden County Transportation Authority [bus service] service area and frequency of operation, introduction of passenger and commuter rail and construction of multi-modal centers, transit-oriented developments, and park-and-ride lots with express bussing.\(^{495}\)

The CCRPC has also laid out a Planning Area Concept that seeks to create both metropolitan and village planning areas that have “multiple modes of travel, including pedestrians, cyclists and mass transit that connect to the same land uses available to the automobile.”\(^{496}\) The CCPRC recognizes that “high-density, mixed-use Planning Areas

\(^{495}\) CCRPC, 2001 Regional Plan, at 4.17.

\(^{496}\) Id. at 3.25 and 3.26.
can reduce motor vehicle emissions by reducing the need for automotive travel” and “serve to maintain acceptable federal air quality standards in the region.”497

Of course, unlike Portland, which has a very powerful regional planning body, the CCRPC has little power to coerce localities into making specific planning decisions.498 Yet, existing mechanisms could be used to realize TOD in the region. For instance, Vermont has a certification process where the regional planning commission may approve local plans for conformance with state goals, the regional plan, and the plans of other municipalities in the area, all of which may promote TOD areas.499 While this certification is not mandatory, there is an incentive for towns to be certified since towns can only apply impact fees on development if their plans are certified.500 Once a town’s plan is certified, the regional planning commission is able to confirm at least twice in a five year period that the municipality is involved in a continuing planning process that will result in a plan that is consistent with state goals.501 Further, apart from local plans and zoning, larger projects must separately conform to regional goals under the State’s Act 250 development review.502 This can be used to help ensure larger developments are consistent with the regional plan.

New tools could be introduced as well. For instance, in Ottawa, Canada, major commercial developments are required to be located near transit stations and to be

497 Id. at 8.2.
498 See 24 V.S.A. § Chapter 117.
499 Id. § 4350, 4397(a).
500 Id. § 4350(e)(3).
501 Id. § 4350(a).
502 10 V.S.A. § 6086(a)(10).
pedestrian friendly, something which has led to the great success of Ottawa’s bus service.\textsuperscript{503} Such a requirement in Chittenden County could have a profound effect by changing developments like Taft Corners, which is sprawling and only conveniently accessible by automobile into more compact, pedestrian-friendly areas around transit centers that would reduce traffic by both allowing people to access them by transit and then allowing them to walk from place to place once they are there. It would also likely foster more coordination between municipalities and investors, where municipalities would be inclined to invest in transit infrastructure to attract major developers, and major developers would look to locate near transit in order to be permitted.

Additional incentives could be used as well. Developers who meet smart growth criteria could be given expedited permit review, or have certain permitting criteria waived. Employees could be given free transit rides from and to work, increasing pressure on employers to locate in areas served by transit so as to add perks for their employees. Public investments in amenities such as compact parking garages, which go up instead of out, could make it desirable for investors to develop around parking garages instead of building large parking lots that create impervious cover and separate buildings.\textsuperscript{504}

\textsuperscript{503} See 1000 FRIENDS OF OREGON, A Summary of the LUTRAQ Project, at 18-19.

\textsuperscript{504} Parking requirements are often a major impediment to the type of compact growth that is compatible with transit use. See SGN AND ICCMA, Getting to Smart Growth, at 12; CLF AND VFOS, Community Rules, at 30-31. Parking lots take up a lot of space, separating buildings, creating deadzones, and making areas seem automobile focused. CLF AND VFOS, Community Rules, at 30 (stating that when parking consumes 9% or more of a land’s area, pedestrian use wanes). But surface lot parking is a cheap way for developers to comply with parking requirements. SGN AND ICCMA, Getting to Smart Growth, at 12. Public investment in parking garages, and allowing for on-street and shared parking to count towards parking requirements are examples of ways that communities can decrease the amount of land needed for parking and foster smart growth. See SGN AND ICCMA, Getting to Smart Growth, at 12; CLF AND VFOS, Community Rules, at 30-31.
Also, business improvement districts, which receive special services from a town in exchange for additional assessments, could be used to foster TOD areas. Burlington’s Church Street is already an area that has such an assessment, where property owners located on the downtown street’s pedestrian mall receive year-round maintenance, management of certain licenses and permits, and advertising and promotions in exchange for a fee.\(^{505}\) Additionally, Vermont already has a downtown program that gives incentives, such as tax credits for rehabilitation of older or historic buildings, planning grants for site assessments of contaminated sites, funding from the state infrastructure bank and state transportation fund, and rebates for the cost of sprinkler systems for development in downtown development districts, to developers who locate in areas designated as downtowns by a state board after a town takes certain steps supportive of downtown development.\(^{506}\) Moreover, transfer of development rights (TDR) are a mechanism that allows developers to develop in an area more than would be allowed under existing zoning in exchange for the placement of restrictions on development on land in another area where development could otherwise occur.\(^{507}\) TDR are a mechanism available under Vermont law and could also be used to direct growth to TOD.\(^{508}\)

Finally, towns with plans approved by the regional planning commission already have the ability to assess impact fees on development.\(^{509}\) These fees can be used by

\(^{505}\) See CLF AND VFOS, Community Rules, at 15-16.

\(^{506}\) Id. at 19-20.

\(^{507}\) Id. at 82.

\(^{508}\) 24 V.S.A. § 4407(16) (however, certain state standards must be met for TDR in Vermont).

\(^{509}\) Id. § 4350(e)(3).
towns to recoup costs on services from sprawling development.\textsuperscript{510} Avoidance of such fees can be a further incentive for developers to locate in TOD areas.

Chittenden County has the right goals and many of the right tools to realize TOD and a land use based alternative. What is lacking is a comprehensive roadmap for such an alternative.

\textit{Recommendations}

To reiterate, the SEIS must ask the right questions about growth and transportation in Chittenden County in order present alternatives that will be effective, affordable and environmentally responsible. The VSGC alternatives need thorough and thoughtful consideration. In addition, FHWA and Vtrans should explore a land use based alternative that

\begin{itemize}
  \item Commits to public investment in transit, such a rail system and improved bus system, that is efficient and convenient for users.
  \item Identifies TOD areas to be connected by transit.
  \item Seeks mechanisms to coordinate entities on a regional level and local level to work to ensure proper planning and design take place for these TOD areas, so that the TOD areas function properly and growth is directed towards these areas.
  \item Ensures that planning outside TOD areas comports with smart growth goals by preserving open space and agricultural land, not allowing strip development, not providing sewer and other services to remote areas, and imposing impact fees on sprawling development.
\end{itemize}

• Provides incentives to investors to pursue smart growth development such as permitting incentives, loan guarantees, tax breaks, business improvement districts, TDR, and other similar incentives.

• Provides incentives to citizens to make smart growth decisions in their own life and investment choices such as location efficiency mortgages to allow potential homeowners to borrow more if they buy in a transit and pedestrian area where their transportation costs will be less and providing free transit for commuters to and from work.

• Looks at market strategies that businesses can implement, such as ride-share programs, to reduce congestion.

• Allows for commitment to other infrastructure investment to support TOD areas, such as parking garages, sidewalks, and the placement of community buildings, like schools, post offices, libraries and municipal buildings, in such TOD areas.

• Explores the possibility of an UGB to further contain and direct growth.

  In a context broader than the CCCH, there are certain changes in the NEPA regulations’ requirements for major highway investment that could also make NEPA a more useful tool in helping communities like the Burlington region reach a more informed decision about their transportation investments. These changes include:

  • In addition to current requirements, require a detailed study of the land use impacts of a highway project that specifically accounts for local and regional planning goals, analyzing whether the highway furthers and is consistent with these goals, and whether and how it might affect future local zoning and planning.
This analysis would have to look beyond immediately affected towns and look to broader regional trends.

- As part of an analysis detailing growth impacts, NEPA should require an examination of the project’s potential effects on future transportation investment. Primarily, whether the growth that will result due to the highway construction will be compatible with future transit and multimodal investment, or will result in growth and land use patterns that make the successful implementation of such transportation infrastructure more difficult and less likely.

- For any major highway project, require that a land use based alternative be considered, and, if one is available, evaluate how regional and local institutions can be coordinated to implement a land use based alternative.

- Specifically require an analysis of the possible impacts to climate change of all alternatives considered for all highway projects. This will ensure an analysis takes place even when a highway alternative, such as the CCCH, will arguably not have a drastic increase in VMT, forcing it to be compared to other alternatives that may significantly reduce VMT and greenhouse gas emissions.

- Finally, NEPA regulations for highways should require an analysis of a “cost-effective” alternative that looks solely at system wide TSM and TDM measures, such as roundabouts, that don’t increase capacity.

Without NEPA, it is likely that bulldozers and cement trucks would presently be constructing the CCCH. Instead, Vermont has time to rethink its growth and transportation future before it makes one of its most significant transportation
investments ever. Such an investment deserves the most thorough consideration. This has not yet occurred. It is up to the stakeholders to make sure that, this time, it does.
CONCLUSION

It is becoming clearer and clearer that major highway transportation investments have serious effects on an area’s land use patterns and, subsequently, environmental quality. It is also plain that, like many regions, Chittenden County is grappling with the challenges of sprawl and congestion.

In the context of these challenges, NEPA has given Vermont another, and perhaps last, chance to decide whether building a major and costly highway is the best investment to solve its current and future traffic problems and influence growth patterns in a manner that won’t create sprawl. Thus far, the NEPA process has revealed this proposed highway will have few measurable benefits and will likely contribute to sprawl. Additionally, few alternatives have been examined and lower cost options with less environmental impacts have not been considered.

This is a critical moment for Vermont. The Burlington area has yet to experience sprawl or congestion to a paralyzing or irreversible extent. It also has the lessons of many communities which have invested in highways only to see their long term traffic problems increase rather diminish as a result, as well as other communities that have instead avoided highway construction and seen lower cost alternatives provide success in relieving congestion and curtailing sprawl.

Smart growth advocates have already used this latest opportunity presented by NEPA to introduce innovative alternatives that promise to achieve affordable congestion relief without causing sprawl. Other alternatives that hold promise should be explored as well and it is likely that a better and more affordable solution than the CCCH can be found. However, whether Vtrans and FHWA conduct the forthcoming SEIS in a way
that seeks to consider these possible alternatives or, as they have thus far done, limits the review of such solutions will likely mean the difference between a region which invests in a future of affordable congestion relief compatible with smart growth or a region that experiences the costs of becoming another paradise paved over.
APPENDIX

Above is an aerial photograph of the Burlington, Vermont region. As can be seen, Burlington is the dense growth center area resting along the coast of Lake Champlain. Interstate 89 can be clearly seen making its way through the area, starting from the lower right hand corner of the picture, going almost due west before turning north, forming a roughly inverse “S” shape to the east of downtown Burlington. The river in the northern portion of the image is the Winooski River.
The above map shows the proposed route of the CCCH, with interchanges indicated. As can be seen, the highway will create a significant corridor for travel and development in the area to the north and east of Burlington, creating a series of interchanges in Williston, Essex and Colchester.
The above picture shows downtown Burlington. The street system is mainly a grid, with uses, such as residential and commercial areas, close together and mixed. This is a good example of compact development amenable to pedestrian use. The image below is an interchange off of Interstate 89 in Williston. It is on the exact same scale as the image above. This development area is known as Taft Corners. It is a classic example of sprawl, with disperse, big box stores off an arterial road and interchange. Note the distance between buildings and the amount of space devoted to parking.
This image, also the same scale as the image of downtown Burlington, is of an interchange off the built section of the CCCH in Essex. Like the image of Taft Corners, development at this interchange is representative of disperse, auto-dependent growth typical of sprawl. Again, vast parking lots and busy, multi-lane roads separate buildings and uses, making pedestrian use difficult, inconvenient and unsafe.

Transit-oriented development as envisioned in the LUTRAQ study. Instead of dispersed growth at an interchange, TOD seeks to promote mixed uses such as housing, a retail and civic center and office space centered around a light rail station. Buildings and uses are close and designed for pedestrians.